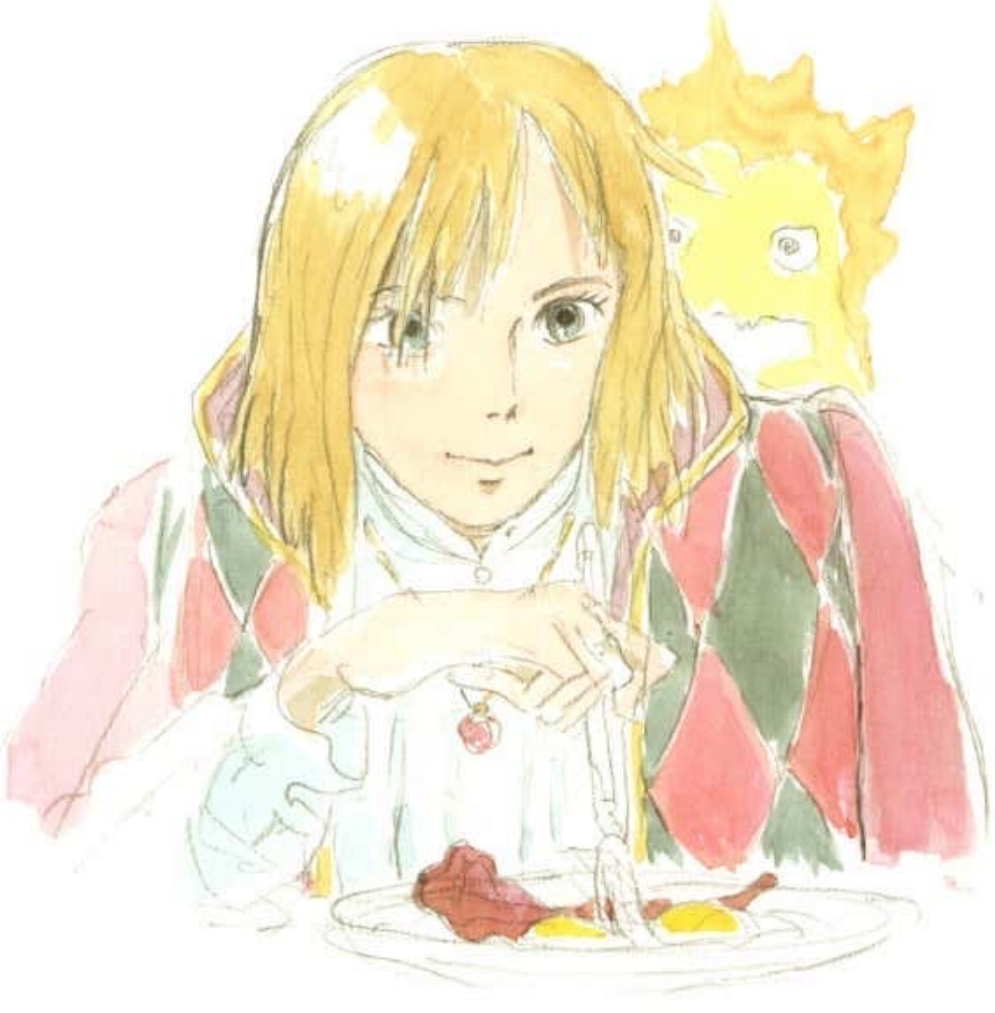
HOWL'S MOVING CASTLE



THE ART OF
HOWL'S
MOVING CASTLE

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About this book

This book is a collection of concept sketches, concept art, backgrounds, character designs (including painted versions), and still images for Hayao Miyazaki's animated film, *Howl's Moving Castle*, based on the book by Diana Wynne Jones. All concept sketches are by Miyazaki. Concept art and backgrounds are by the art staff supervised by art directors Yoji Takeshige and Noboru Yoshida. Character designs are by supervising animators Akihiko Yamashita and Takeshi Inomura. The background art and still images for this book were created from digital data. Scene images without captions are still images.

P1 ... How the wizard and Sophie met, the two design concept sketches
PP2-3 ... How a castle traverses the wasteland, concept art
PP4-5 ... Howl's castle seems to be the complete set
PP6-7 ... Sophie's shop and neighborhood, concept art

Part one

Introduction

Howl's Moving Castle is set in a world conceived by the late 19th century European neo-futurist painters where magic and science co-exist. One day, a witch of the wasteland puts an 18-year-old girl named Sophie under a spell, turning her into a 90-year-old lady. The aged Sophie encounters the wizard Howl. She begins her strange life with Howl at his castle, the formidable walking fortress.

The film is based on *Howl's Moving Castle* (published in the U.S. by HarperTrophy) by children's book author, Diana Wynne Jones. The book was adapted by Miyazaki who concentrated on its "war love story." He drew countless concept sketches to convey the unique world of *Howl's Moving Castle*. The following images in this book are his initial concept sketches. Although the concept sketches illustrate scenes that were never filmed, they provided the foundation for the production of *Howl's Moving Castle*.

Before its nationwide release in Japan, *Howl's Moving Castle* premiered as the first Japanese animation entry at the 61st Venice International Film Festival in 2004 where it received the Golden Osella Award.

Screenplay Directed by Hayao Miyazaki

Hayao Miyazaki was born in 1941 in Tokyo. After receiving a degree in political science and economics from Gakushuin University, Miyazaki worked at Toei-Doga (currently Toei Animation) creating scene designs and original drawings for *Little Norse Prince Valiant* (1968). Later he moved to A Pro, where he was responsible for stories, screenplays, scene-settings, and key animation for *Panda! Go Panda!* (1972). In 1973, he, along with Isao Takahata and others, moved to Zuiyo Images. In 1985, after working for Nippon Animation and Telecom, Miyazaki became a co-founder of Studio Ghibli. His work until then included scene designs and scene organization for *Heidi* (1974) and directing *Future Boy Conan* (1978) and *The Castle of Cagliostro* (1979). He wrote and directed the screenplay for *Nausicaä of the Valley of the Wind*, a film based on his original manga serialized in "Animage" magazine. Since then he has directed the animated feature films *Castle in the Sky* (1986), *My Neighbor Totoro* (1988), *Kiki's Delivery Service* (1989), *Porco Rosso* (1992), *Princess Mononoke* (1997), and *Spirited Away* (2001). He is also the director of the Ghibli Museum and the author of *Shuna's Journey* and *From The Point Forward* (both published by Tokuma Shoten).

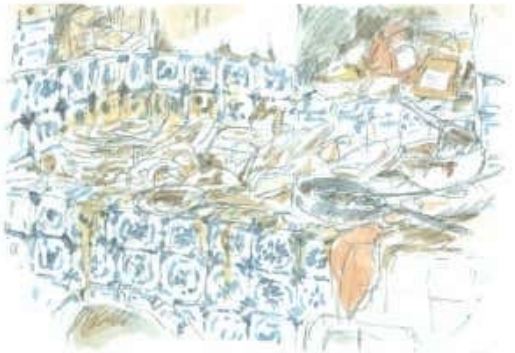
Production Synopsis

September, 2002: Approximately one year since the release of *Spirited Away* (2001), the animators at Studio Ghibli were on hiatus while the main staff embarked on a research trip for Miyazaki's new film *Howl's Moving Castle*. The staff visited Europe for 12 days and, although their research centered on the eastern province of Alsace in France where the film was set, they also spent time in Heidelberg (Germany), and Paris. Visiting the Alsatian city Colmar for its color and atmosphere proved to be a productive experience for the staff. After returning from their trip, they began working on pre-production tasks including character designs and art concepts, as well as digital animation tests for Howl's castle's movements. Miyazaki worked on concept sketches and storyboards, then began storyboarding in November.

January, 2003: Testing for the castle's movements and the main character designs were finalized. On February 1 (Saturday), the animators returned from their hiatus to Studio Ghibli, marking the official commencement for the production of *Howl's Moving Castle*. The first rushes for the film (company screenings of shot sequences) were shown approximately six months later on July 18 (Friday). Twenty-eight scenes were screened.

January, 2004: The storyboards Miyazaki began over a year ago were finally completed in November, 2002. Toho's scheduled release date of early summer was postponed to the fall. Production work continued smoothly with the first voice-over recording conducted between April 12 (Monday) and April 17. On June 3, Miyazaki completed checking key animation. On June 9 (Wednesday), the supervising animators' work was completed and by the end of June, most of the work including in-between/clean-up animation, art, digital painting, digital animation, and digital shooting was finalized. The second voice-over recording was conducted between June 5 (Saturday) and June 17 (Thursday) and the dialogue, music, and sound effects were mixed to the entire film in July. The first test screening was held on August 3 (Tuesday), marking the completion of *Howl's Moving Castle*. Its running time is 119 minutes, 11 seconds and 00 frames. The film consists of 148,786 animation sheets. The first run domestic release in Toho-Yoga film theaters began on November 20 (Saturday).

P8-9 Transformed into a bird-like creature, Howl flies over a battlefield.
P11 The flying kayak approaching Howl's castle.
P12 Howl's castle terrace with Sophie, Markl, the dog, Heen, and the scarecrow, Turnip.
P13 A fleet of kayaks flying over Markl and his friends.



P14-19

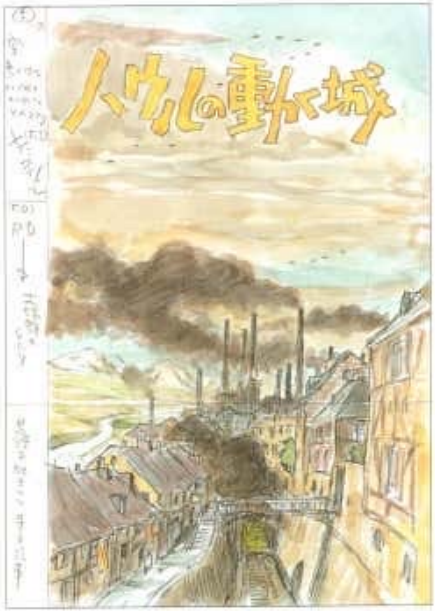
1 Sophie's house and neighborhood.
2 Sophie walking through the main street where the steam trolley passes through.
3 The storefront for the shop where Sophie's younger sister Lettie works. The streets are crowded for the military parade.
4-5 Sophie, suddenly transformed into an old lady, encounters Howl in the wasteland.
6-7 Sophie enters the castle and falls asleep at the fireplace of the fire demon, Calcifer.
8-10 Sophie entering the castle. This sketch provides a layout for the interior including the entrance, staircase, kitchen and fireplace.
11 The filthy kitchen.

Storyboards

Miyazaki's countless storyboards formed the foundation for the story. With their rough sketches and notes on the storyline, storyboards are more informative than concept sketches, providing an in-depth guide to the world of *Howl's Moving Castle* for the staff members.

P20-21 Opening sequence. Howl's moving castle emerges from the fog when the main credits appear.

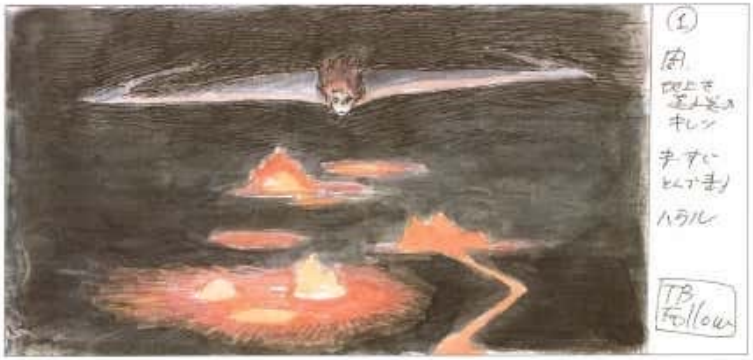
P22-23 Main credits are followed by the street scenes, the conversation at the hat shop where Sophie works, followed by her leaving work.



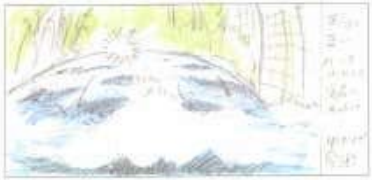
PP4-25 Leaving the hat shop, Sophie walks to the main street where she rides the steam trolley. The detailed scenes depict pedestrians and vehicles including steam automobiles.

P25-27 The fleet of flying kayaks brandish their national flag over the sky as the Toto soldiers march through the city parade. Sophie retreats into an alley to avoid the crowd when...

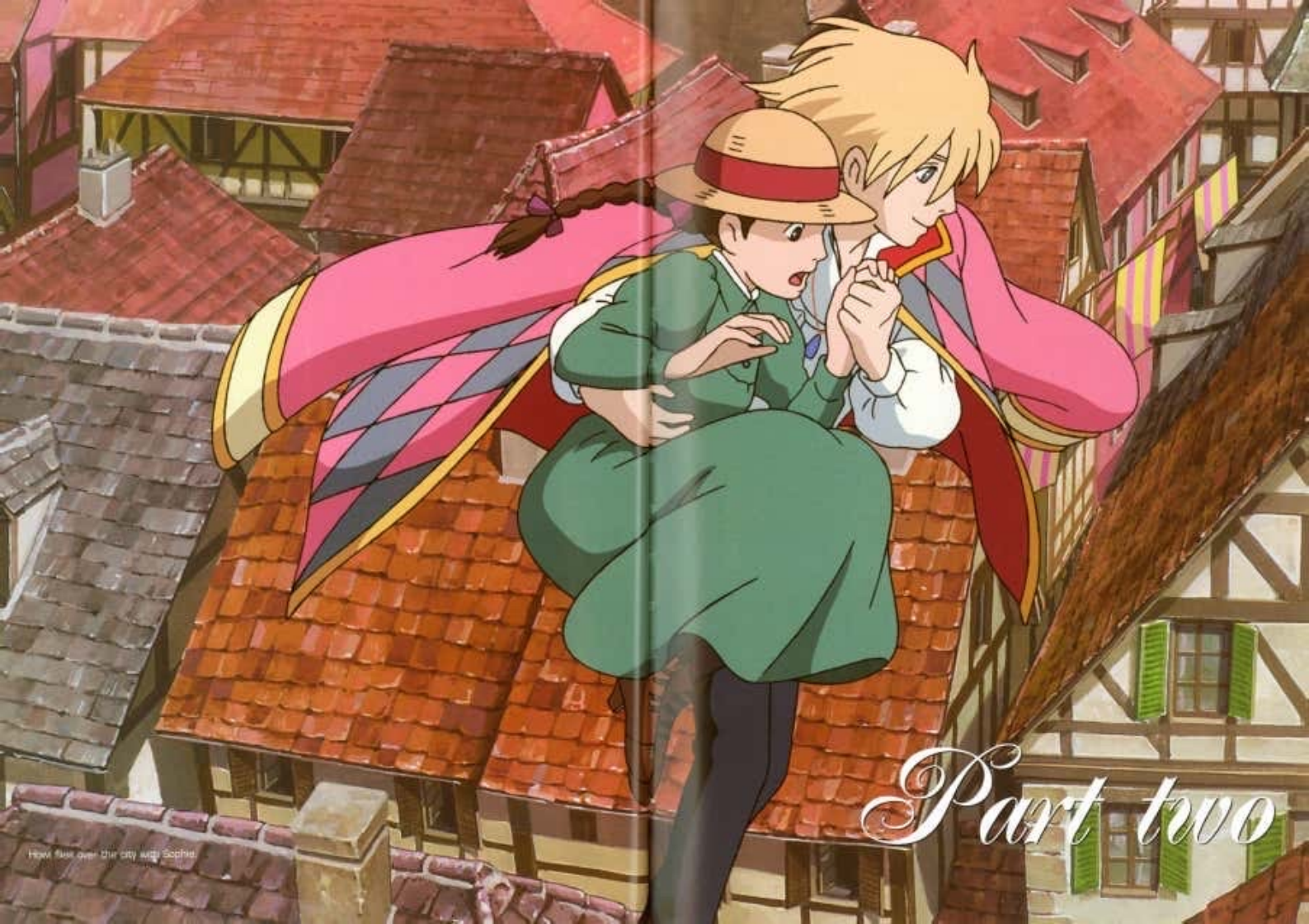
P28-29 A handsome young blond man rescues Sophie from the soldiers harassing her. He is the wizard Howl who is rumored to be the thief of young women's hearts.



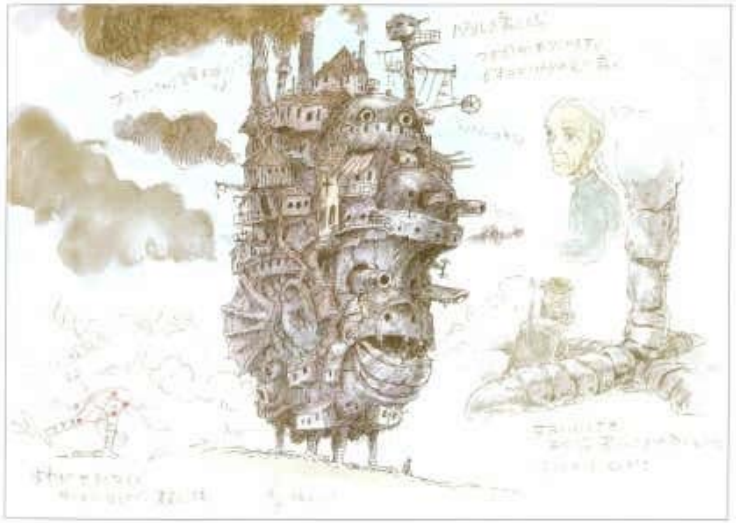
P30-31 Sophie's new acquaintance Howl assumes another guise. He is the lone fighter against war.



P32-33 The battle between Howl, the disciple, and his former master, Madam Suliman, takes place in the greenhouse of the royal palace. The court appointed wizard Suliman was the mastermind behind the nation.



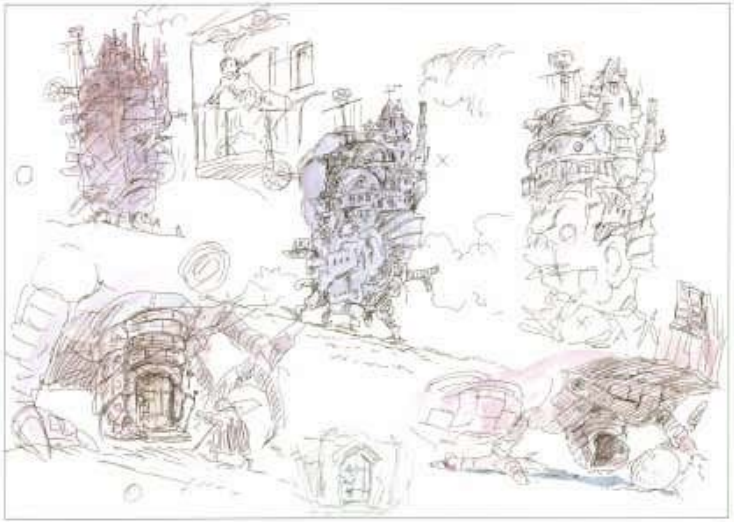
Howl flies over the city with Sophie



Howl's Castle

The wizard Howl's moving castle. Powered by the fire demon Calcifer, the noisy castle emits steam and roams around like a living creature. The castle is covered with houses, cannons, and other disparate parts including vans and assorted junk. The interior includes a living room/kitchen, bedrooms for Howl and Markl, and a bathroom.

↑ Initial concept drawing for Howl's castle (concept sketch)
↓ Contrast between Howl's castle and humans. Designs for the castle's feet. Initial draft of Sophie as an old lady (concept sketch)



1 Interior of Howl's castle (concept sketch).
2 Underside and legs of the castle's body (concept sketch).
3 Opening sequence of Sophie's view from her workshop, including Howl's castle and steam trolley in motion (concept sketch).
4-5 Opening sequence where Howl's castle appears out of the fog, scaring off a flock of sheep. The art directors based their concept art on Miyazaki's storyboards (concept art).
6 Howl's castle walking through the fog (concept art).

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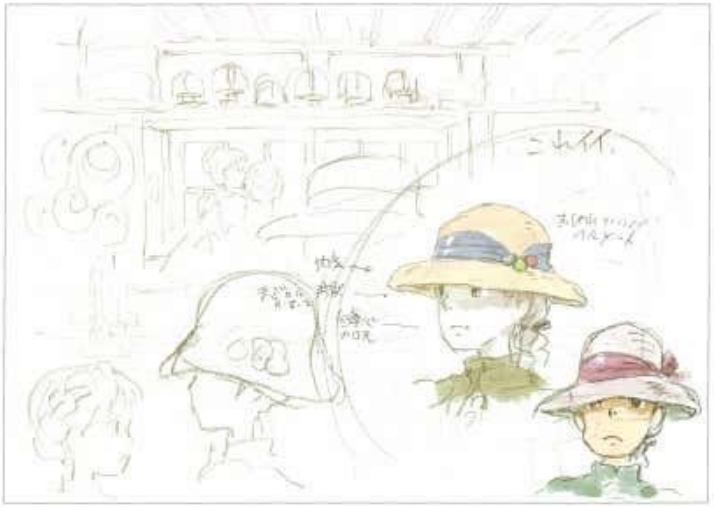
Sophie

After the Witch of the Waste puts a spell on the 18-year-old heroine Sophie, she turns into an old lady. Her stepmother Honey has her run the shop they inherited from her father.

P40-43

1-3 Various rough sketches of Sophie, her younger sister Lettie, and Sophie's shop (concept art)

4-7 Sophie's facial expressions as she goes out, wearing her hat. Her last name "Hatter" was "Outer" at this stage (concept art)



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1 Sophie's workshop in the back of the hat shop.
2 The needlewomen's gossip about Howl makes Sophie glance out the window. She can see Howl's castle roaming the hill of the resistant fairway.
3 Sophie impulsively leaves the shop. She wears her favorite straw hat and attempts a smile in front of the mirror, but she immediately turns glum again.

From Sophie's character designs (top and bottom)

I really wanted to preserve the style of the key animation drawings.

Supervising Animator, Takeshi Inamura

This was the first film I worked on as supervising animator. Because of the extraordinary amount of work involved in making a feature film like this, I was teamed up with Akihiko Yamashita and Kitaro Takasaka early on in the production. My work mostly consisted of creating the character designs with Yamashita and checking the animation (characters).

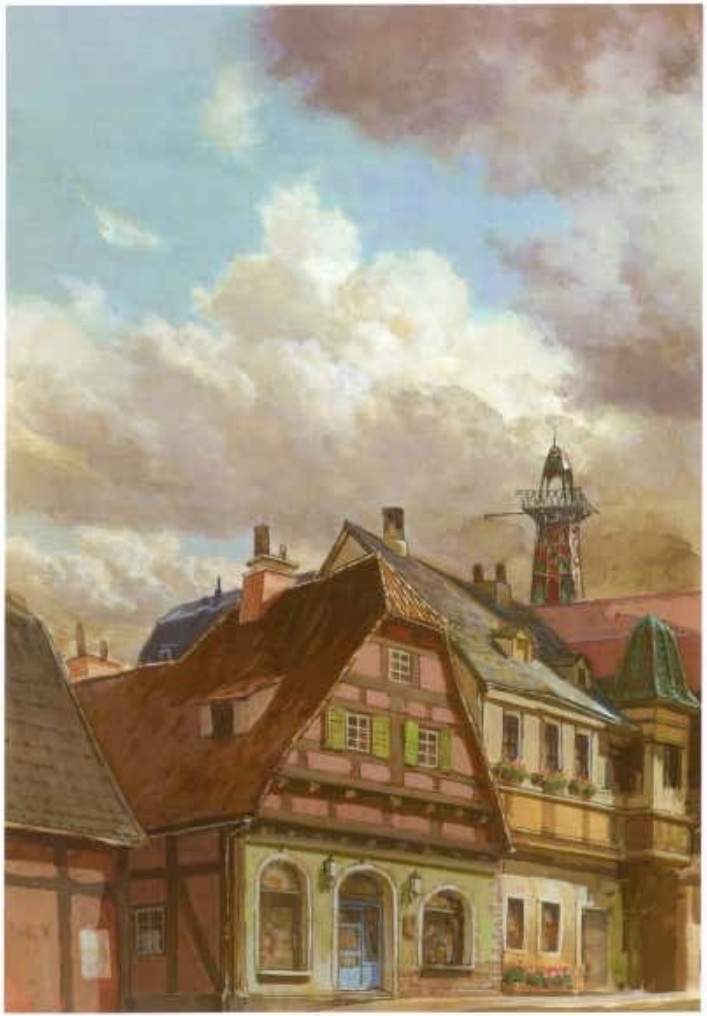
I did my best not to alter the *key animation* excessively. Each animator has his or her touch, whether it's in terms of drawing style or movements. The supervising animator can stifle the animators by insisting on his own approach for the sake of consistency and uniformity. The quality of animation in the recent Ghibli films has been extremely high, so we work a lot even on minute details, but as supervising animator, I wanted to preserve the style of the key animation while maintaining consistency.

Of course, I would alter whatever I had to, but a key animator's style isn't easy to remove. Each animator's thoughts and feelings, in other words—the general mood they were in while drawing—always remains intact in the film. I heavily altered some scenes of everyday life, walking or running scenes where I felt a character's personality, feelings or presence had to be enhanced. There were other parts I left untouched almost completely. For example, Miyazaki drew the key animation for Calcifer's first appearance. Yamashita only touched up some rough parts as Miyazaki's key animation was almost entirely preserved. The scene where Howl turns into a monster, fighting in the fire, was like that too. Miyazaki would say, "Maybe like this, or something like this," and then he would end up drawing everything. In the end, he declared, "I'll assume full responsibility (laughter)."

The most difficult part was keeping track of the characters' details—their ages changed so often. I ended up learning a lot. The digital animation staff was very helpful in matching CG to our drawings and processing animation. Working on this film was a very important experience for me.

Takeshi Inamura

Takeshi Inamura was born in 1969 in Gunma Prefecture. He worked as an animator at Sharo Dogs, supervising in-between/cleaning, animation and animation check. He began working for Studio Ghibli in 1997 and supervised in-between/cleaning animation for *Porco Rosso* (1992). After supervising key animation for the first time for *Ocean Waves* (1993), he supervised key animation for many Ghibli films including *Spirited Away* (2001). He received the Noburo Ofuji prize for outstanding achievement in animation at the 58th Mainichi Film competition. He was directing animator for the animated short film *The Whale Hunt* (2001) at Ghibli Museum.



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Hatter Family

Sophie's house. Along with her shop, it's in the row house working class district.

1 Exterior of Hatter hat shop on the small avenue (concept art).
2 Fleet of flying kayaks in the sky above the shop's sign.
3 Hatter family's courtyard. Sophie's workshop is in the back. The staircase on the left leads up to the bed room (concept sketch).
4 Hatter family's courtyard again (concept art).

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1 Sophie crosses the small plaza. Rails for the blue bus steam trolley run through it (background).
2 Rows of houses seen from above as Sophie and Howl go for a sky walk (background).

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3-5 Teal concept art for initial production. Four depicts a city that increasingly relies on steel technology.

5

I incorporated Western painting techniques and images into the background drawings.

Art Director, Yoji Takeshige

Nobuo Yoshida and I worked as art directors for this film. Our approach in style (including colors) is completely different. This film is filled with landscapes, and I think the variety in colors and atmosphere came from our work being combined.

We didn't divide up the work strictly for the background drawings. With the initial concept art, I drew the castle interior while Yoshida drew the wasteland, so I ended up mainly drawing the interiors.

At the initial stage, the director referred us to the work of an illustrator named Albert Robida (1848-1926) who was prominent at the time. For architectural styles, we based the overall setting on the wooden architecture style called half-timber so prevalent in German and English homes. We had the opportunity to take a research trip to Europe. We visited the French Alsatian city, Colmar. The light and atmosphere of the city, the reddish cobblestone streets, the drifting clouds and sunlight left such a strong impression on us they were incorporated throughout the film.

Most of the films I had worked on were set in Japan so this was the first time I drew European cityscapes. It was difficult to restrain my ingrained Japanese approach to color, so Miyazaki would often instruct me to make my colors "brighter and more colorful."

I had experience in oil painting, so I incorporated Western approaches to colors and space into my work. For example, I thought of the lighting and atmosphere in Vermeer's paintings when I was working on the scene where Sophie quietly works away in her workshop, although I'm not sure I succeeded. ... There are Western paintings, particularly those by the Impressionists, where the objects aren't drawn in detail. The lighting depicts the space instead. By trial and error I tried to emulate that sensibility. It was very difficult, but I hope my drawings not only depict each object, but also convey lighting and sunshine.

Yoji Takeshige

Yoji Takeshige was born in 1954 in Philadelphia. After leaving the oil painting department in Tama Art University, he was hired by Ghibli as a background artist for *My Neighbor Totoro* (1988). He worked on *Only Yesterday* and officially joined Studio Ghibli during the production of *Porco Rosso*. He supervised backgrounds for *Pom Poko* and *Whisper of the Heart* and was art director for *On Your Mark*, *My Neighbors the Yamadas* and *Princess Mononoke*. He has also worked on the non-Ghibli films *Royal Space Force: The Wings of Honneamise* (1987), *Mobile Police Patlabor* (1989), and *Ghost in the Shell* (1995).

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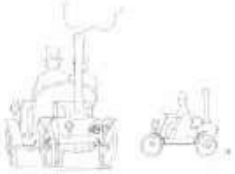

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City Transportation

Various transportation vehicles appear as Sophie heads toward the city's central district. From the steam trolley (blue bus) transporting the working class every day to the chauffeured cars of the rich, steam engines are prominently featured in the city.

1 The detailed design of the blue bus includes advertisement signs (concept sketch).
2 A tractor-like steam car passes behind Sophie as she crosses the plaza.
3 Sophie rides the double-decker blue bus. The bus is packed with passengers heading toward the central district.
4-5 Steam car and blue bus (both character designs).

6

Pedestrians

Sophie lives near the industrial district. Because of the ongoing war, military uniforms stand out.

6 Cabaret dancing in the plaza (character design).
7 Dressed up ladies (character design).
8 Crowded café facing the plaza (character design).
9 Street scene of the working class residents (character design).

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Howl

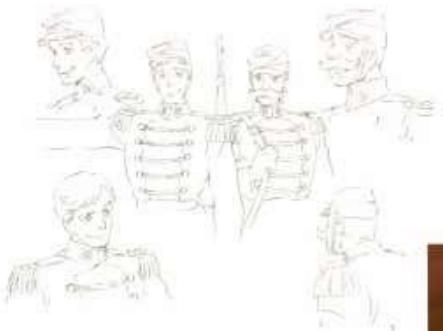
Wizard reputed to be the thief of young women's hearts. He was once a disciple of the royal court's great wizard, Madam Suliman.

1 Rough sketches of Howl, his disciple Markl, the fire demon Calcifer, and Sophie as an old lady (concept sketch)
2 Encounter between Sophie and Howl (concept sketch)
3 An exhausted Howl and Sophie aged (concept sketch)
4 Howl's outdoor clothes (street clothes, coat) (concept sketch)
5-8 Pose and close-up illustrations for Howl (all character designs)

The Soldiers

Looking for a shortcut to the café where her younger sister Lettie works, Sophie enters an alley. A handsome soldier and his mustached partner harass her. Howl appears suddenly and gets rid of them instantly with his magic.

1 The two soldiers call on Sophie. (character design)
2-3 They tease her, calling her "little mouse."
4-5 Howl appears out of nowhere, drives off the soldiers, and walks away with Sophie.



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The Blob Men

The Witch of the Waste sends her henchmen after Howl. Able to penetrate walls, they shrink and stretch fleshly as they swiftly attack Howl and Sophie.

6 "Sorry I got you involved," Howl apologizes, but he sounds upbeat and calm.
7 The blob men have big noses and wear hats (concept art).
8-9 The gang of blob men in pursuit of Howl.

7

Sophie and Howl

After escaping the blob men, Howl takes Sophie and flies up into the sky. He gracefully walks through the sky. The escorted Sophie crosses the plaza from up above, and reaches the terrace of Cesario as if descending an invisible staircase.

1 Sophie walking through the sky as Howl leads her.
2 The two walk above the crowded plaza.
3-4 Sophie offers Howl a bright smile as they part ways.

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"Sophie and Howl are basically the pretty girl meets pretty boy type. When I worked on the character designs I realized I only have one style for drawing a pretty pair (laughter). I made sure he had a solid core to his personality. Howl's facial expressions began to change in the latter half of the film. For the scene where Sophie and Howl walk over the sky, Miyasaki told me: 'He can be carefree here.' That was when I finally realized, 'oh, so that's how he is.' Howl gradually reveals his true nature of being carefree."

(Supervising Animator: Takeshi Inamura)

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"I'm not very interested in drawing beautiful girl characters with large round eyes. But I really enjoy drawing girls like Lettie who actually might exist. Many of Miyasaki's characters seem so real. Sophie might look cute on her own, but when she's next to her younger sister Lettie, she gives the impression she's plain. I enjoyed that contrast."

(Supervising Animator: Akihiko Yamashita)

Lettie

The second daughter of the Hatters, she is Sophie's younger sister. She is a chocolate sales clerk at a large cafe called Cesario. Cheery and outgoing, she takes after her mother. She is popular and adored by the cafe's patrons.

5 Rough sketch of Lettie Hatter (concept sketch).
6 The chocolate counter is crowded again today with customers seeking Lettie.
7-9 After hearing Sophie dreamily recount her unexpected encounter, the concerned Lettie warns her: "If this wizard was Howl, he'll destroy your heart."
9-10 Pose and close-up illustrations for Lettie (character designs).

10

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1-2 Sophie heads homeward.

From the crowd scene.
Top Soldiers and ladies dancing in the plaza.
Bottom The crowded Ossan's.

For the first few months all I did was draw character sketches.

Supervising Animator, Akihiko Yamashita

During the pre-production period (before the production officially began), I first began by teaming up with supervising animator Takeshi Inamura to create the character designs. All I did at first every day was draw sketches of all the characters. I must have drawn 50-60 sheets of the main characters Howl and Sophie. I would try out various face types and proportions, then show the sketches to Miyazaki for feedback. Inamura and I would also share each other's work. We finalized the character designs about 10 days before the production began.

Inamura ended up supervising the clean-up animators, while I supervised more minor characters such as the monsters, the pedestrians, and soldiers. Our drawings were based on Miyazaki's concept sketches and tailored for the animators. I had the hardest time working on the aged Sophie. It came by trial and error. I would draw all kinds of portraits of her being thin, having sharp eyes, or looking exhausted. While I worked on these drawings, the storyline evolved, depicting Sophie's aged condition as a liberating experience. So we ended up portraying her as the cheerful old lady you often see in Ghibli films. I have a huge pile of rough sketches I did during the entire process (laughter).

Once production began and the director approved the key animation, Ishiodo checked the action sequences while Inamura and I checked the star children scenes. Initially, the staff wasn't producing much key animation, so Miyazaki told us, "If you have time on your hands, I want you to draw some battleships." We drew about 10 key animation shots where the battleships leave the harbor and then return completely wrecked and smoldering. I had never drawn a 19th century battleship, so Miyazaki loaned me books from his private collection. The material was so fascinating I spent hours looking over it (laughter).

I had the opportunity to draw key animation for *Spirited Away*, but this was my first experience as a Ghibli staff member, so it was interesting in many ways. Given how the studio includes not only animators but also an entire staff for art, ink and paint, shooting, as well as CG, I found the close communication between each department really refreshing. With most animation films, the work is divided up so that each operation takes place in another location. So I found this form of "communal work" exceptional and gratifying, as if we were all navigating one large ship together. In terms of clean-up/in-between animation, it was very interesting to have the freedom to alter the character designs according to the characters' emotional development.

My most rewarding experience, however, was having the chance to really observe Miyazaki up close. For example, if I had directed *Howl's Moving Castle*, I think it would have been a war between wizards where Howl would ward off the Witch of the Waste. But Miyazaki wasn't interested in portraying the witch as evil. His open-minded approach was very inspiring.

Akihiko Yamashita

Akihiko Yamashita was born in 1966 in Ibaraki Prefecture. After establishing himself as a freelance animator, he became supervising animator for *Mobile Suit Gundam ZZ* (1986). He supervised character designs, storyboards, and animation for OVA (original video animation) *Giant Robo – the Day the Earth Stood Still*. He was also supervising animator for PS Soft (Playstation Software) *Genso Suikoden: Eiketsuno Tsue* (2002), *Genso Suikoden 3* (2003). He first worked for Ghibli as a key animator and officially joined Studio Ghibli in August, 2004, as supervising animator for *Howl's Moving Castle*.

The Hatter's House at Night

It was dark when Sophie returned home. An unexpected customer suddenly appeared as she began closing up the store...

Page 60-61

1. Interior of Hatter hat shop (concept sketch).
2. Sophie returns to the Hatter hat shop at dusk. The sky is still tinged with twilight (background).
3. Sophie lights the gas lamps giving the shop a faint glow (background).
4. The witch's paregoric passes through the empty glass at right (concept art).
5. The units interior of the Hatter hat shop (concept art).

Initial test concept art for city streets (left) and interior of Hatter hat shop (below).

At the beginning, the color was a little subdued.

Art Director, Noboru Yoshida

When we learned the outline of the story at the first staff meeting, I was warned "the art in this film won't be easy." It became clear the film needed two art directors, so Yoji Takeshige and I were assigned.

I still didn't have a good grasp of the overall look for the film during the first few months, so I continued drawing rough concept sketches based on the photos from our research trip and other photograph collections. There wasn't a storyboard yet, but there was a concept sketch by Miyazaki depicting Sophie walking on the moorland ridge under the sky filled with distant clouds. That drawing allowed me to grasp the overall look of the film.

When we first began working on the concept art, both Takeshige and I used subdued colors, but Miyazaki wanted more colors. He added requests like "I want a blue sky that's wider and more exhilarating!" I was mainly supervising the exterior of the castle, so the concept art for the castle's exteriors also became brighter.

Noriko Takaya's supervision of harmony processing (cel drawings as detailed as backgrounds) was absolutely integral to the castle drawings. Her approach to harmony prevented the dark interior from becoming dull, and she managed to maintain the tone and textures of the stronger colors. When Takaya works on an image, she not only uses a brush, but also touches up the images with her fingers and cloth, making sure it won't look too simple and bland. I worked on the colors, adhering to Miyazaki's concern for texture in this film, and drew the concept art so it wouldn't be too dark.

I also want to mention one particularly detailed process. The drawing for Howl's room was very detailed. Instead of simply reproducing it though, we had the camera staff soften the focus. This really made the characters stand out. In terms of the art's texture and depth, there's a real big difference between processing a drawing that's very detailed and one that isn't, so I was really glad we did that.

Noboru Yoshida

Noboru Yoshida was born in 1954 in Shimane Prefecture. He was hired by Design Office MECHAMAN as an animation background artist. He became a freelance artist and first worked for Ghibli on *Princess Mononoke* (1997). He officially joined Studio Ghibli and worked as associate art director for *My Neighbors the Yamadas* (1999) and *Spirited Away* (2001). He was the art director for the animation film shorts at the Ghibli Art Museum, *Koro's Big Day Out* (2001) and *Ghiblies episode 2* (2002).

The Witch of the Waste

Seduced by evil ways, this once great sorceress turned into a wicked witch. She hates Howl for abandoning her. After he rescues Sophie, the witch puts a curse on her.

1 "You got some nerve going against me, the Witch of the Waste."
2 The Witch of Waste attacks Sophie.
3-4 Pose and close-up illustrations for the Witch of the Waste (character designs).
5 The dressed up blob men wearing silk hats and masks (concept sketch).
6 The blob men carrying the Witch of the Waste on her palanquin (concept sketch).
7 The blob men blocking Sophie as she tries to escape.

"We first began with some sketches based on a photo of an old English lady. It became obvious she wouldn't be very appealing if she only looked scary. Following Miyazaki's request I made her look more erotic in her character design by drawing a full-bosomed, voluptuous woman. In his initial sketches Miyazaki also drew her as plump and voluptuous. We drew her in the same vein."

[Supervising Animator: Akihiko Yamashita]

"I worked on portraying the Witch of the Waste as caring, so she wouldn't be seen as a simple evil character. She herself doesn't consider herself evil at all, and in fact, she isn't a bad person. In terms of animation, it was difficult to draw her after she ages. The wrinkles we added inevitably stretched her face. The downward multiple lines would make her nose droop, elongating her entire face. The hardest task for me was to subdue that effect and keep her physique intact."

[Supervising Animator: Takeshi Inomata]

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The Elder Sophie

Cursed by the Witch of the Waste, Sophie turns into a 90-year-old lady. The aged Sophie realizes she has no other choice but to leave her abode.

1-4 Various rough sketches of Sophie as an old woman (concept sketches).
5 Sophie aghast at the sight of her aged reflection in the mirror.

4

"I was determined to make the aged Sophie look cute, but I had to dismiss that approach almost immediately. She simply wouldn't look old without her skin being wrinkled and blemished. She might appear plain, but I made sure she would have the appeal of a refined old lady. I would alter the colors according to each scene. For example, when she cheerfully cleans the rooms, I added some brightness to her skin and clothes. I did the same with the Witch of the Waste when she's stunned after losing her magical power, but then ends up becoming kind. I wanted to make her buoyant there. I've taken this approach in previous films, but in this one I really worked on conveying the emotional developments with colors in minute detail."

(Color Design Director: Michiyo Yasuda)

5

1 Notes on Sophie (concept sketch)
2 Pose and close-up illustrations for the aged Sophie (character design)

"At first, I drew her as if she were merely an older version of Sophie, but then she didn't resemble Sophie at all. So I thought it might be better to draw the aged Sophie as representing Sophie's personality. I came up with a character design that would give the viewer a sense of her personality. The drawings became more 'Sophie-like' once I managed to convey Sophie's personality as an old lady."

(Supervising Animator: Takeshi Inamura)

I changed the hues in detail according to each emotional development.

Color Design Director, Michiyo Yasuda

Our last two films, *Princess Mononoke* and *Spirited Away*, were set in Japan, so it had been a while since we worked on a film set in Europe. In terms of color design, I was conscious of the European setting, but I didn't automatically opt for a chic French or English design. I did however deliberate whether the skin colors should be particularly "European" white. I began with the basic premise that they should look whiter than Japanese people. I wanted the overall color design to be faithful to Miyazaki's work.

My personal taste has always leaned towards European landscapes and chic colors in architecture, so my own sensibility was compatible with that type of setting. Making everything look soft can be unsatisfying, though, so I'll end up adding sharper colors. Maintaining a balance between the two realms is difficult, but my basic approach was to derive my colors from Miyazaki's concept sketches and match them to the themes and atmosphere of *Howl's Moving Castle*.

In order to determine colors I always take into consideration the personality and emotional development of each character and the director's aims. But the characters in this film change so much physically from scene to scene the emotional development can be equally drastic. I changed the colors in detail with every change. For example, Sophie turns into an old lady and then becomes young again, but by then she's experienced so many things, including her encounter with Howl. I felt she had changed dramatically from who she was at the beginning of the film. I left Sophie's hair white in the scene where she suddenly becomes young again in the high noon scene with Howl's hideaway hut, and it turned out right. Miyazaki also agreed and suggested, "How about we just keep her hair white," so we kept her hair that way in the second half of the film. But the hue of her white hair when she's middle-aged differs from the hue of her aged hair.

I'd never worked on a film where a character physically changed with their emotional changes, so I was never absolutely confident, constantly doubting my work and asking myself, "Are these colors really right?" It was fun though to feel such anticipation. I discussed with the director how "you can only be this focused in your mid-40s," and how things change depending on age. I would feel kind whereas Sophie becomes maternal towards everyone, I would feel the same way she does when she thinks of Howl. So I went through a lot of personal reflections as I worked on this film. Maybe those emotions never change no matter how old you get. I get so engrossed in my work I usually don't have time to reflect, but working on *Howl's Moving Castle* turned out to be an exceptional experience for me.

Michiyo Yasuda

Michiyo Yasuda joined Tokyo Movie Shinsha in 1968. She was one of the first employees at Tokyo Movie and encountered later Takahata and Hayao Miyazaki through shared union activities. She did black work for *Little Norse Prince Valiant* (1968). Her first major assignment came during *Future Boy Conan* (1978) when she was responsible for supervising color design for the entire movie. Her contributions to films by Takahata and Miyazaki have been essential to Ghibli since its inception. She has supervised color design for most of the Ghibli catalogue including *Nausicaa of the Valley of the Wind* (1984), *Spirited Away* (2001), and *Ghiblies episode 2* (2002).

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Sophie's Departure

The next morning Sophie leaves through the back exit of her home without a word. The aged Sophie bears the excruciating pain in her weak legs from the long walk as she heads to the wasteland.

1 Sophie leaving home through the backstreet of the Hatter's residence (concept sketch).
2 She gets a lift on the hay cart as she heads for the wasteland.
3-4 Sophie climbs the hill of the wasteland (concept art).
5 The road by the house of the farmer who drops off Sophie here (background).

3

"Sophie walks alone in this scene. When I worked on the concept art, I didn't want it to look completely desolate. But I also didn't want it to look too nice. I drew the brown patches of earth so it wouldn't convey too much of a 'prairie image.' Miyazaki wanted the place to have dry weeds mixed in with lots of stiff tall stalks."

[Art Director: Noboru Yoshida]

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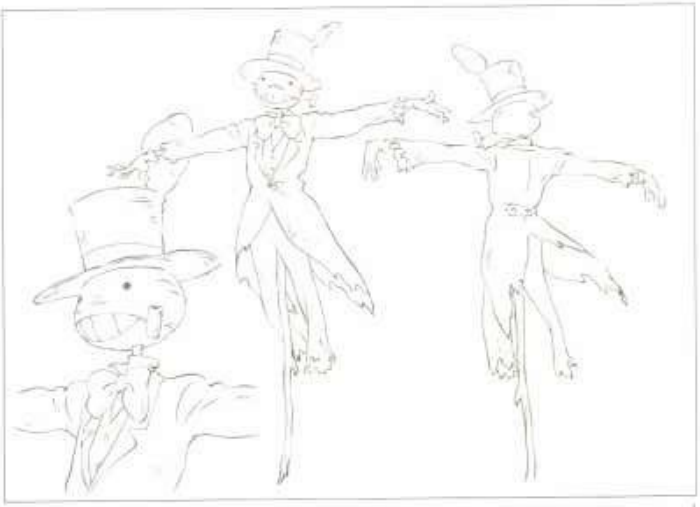

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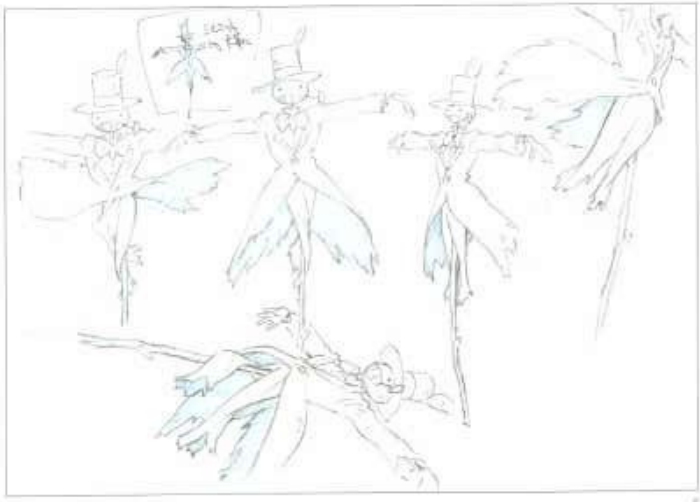

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"The character design for Turnip came easily to me, but several things were altered once the main production began. His denigrin pants looked too messy so we had them wrapped around his leg pole. Then we added the design for him to turn handsome later in the story. Turnip's movement was difficult though. It was just too clumsy. We couldn't get him to skip right. Having him hop like an unleaund spring only came later midway in the production. He's hopping around a lot in the images we worked on at the final stage."

(Supervising Animator, Akihiko Yamashita)

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Scarecrow Turnip

On her way to the weekend, Sophie encounters a scarecrow with a turnip head. She helps the scarecrow, and it begins following her.

1-2. Pose illustrations for Turnip (character designs)
3. Sophie thanks Turnip for retrieving her cane.
4. Scarecrow's waggling face.
5. Giant ship flies over Sophie (concept art).

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Sophie Encounters the Castle

Sophie leaves the scarecrow Turnip and climbs further up the hill road when she suddenly hears a loud, strange sound. Did Turnip lead her to Howl's castle?!

1-2 Howl's castle reveals its monstrous features beyond the ridge where snow begins to fall. (concept art)
3 Sophie is exasperated by Turnip who shows up again from the side of the castle.
4 The entrance/exit at the "butt" of the castle

"We already had Miyazaki's concept art for Howl's castle, so I based the concept art drawings on his work. I had countless opportunities to show Miyazaki the art boards, and he would make many specific requests like I should 'make it look more rusty,' or that 'it should look darker.' After numerous drawings he finally said, 'Let's go with this,' and gave his approval."
(Art Director: Noboru Yoshida)

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Howl's moving castle is depicted as a character. When Sophie encounters the castle for the first time, its movements convey the impression of being "scary," but once it stands still it looks "a little inviting." The castle's leg movements were a combination between the reptilian walk of a lizard and CG walk cycle. The close-ups for the legs were animation and the long shots were CG.

This was my first film where I concentrated on a character's movements.

Director of Digital Animation, Mitsunori Kataama

In keeping with the film's title, *Howl's Moving Castle*, Miyazaki explained to me before I began working on the film, "The story won't work without the castle moving. The castle isn't just part of the background. It's a character so I want you to treat it as a protagonist." He also told me, "We'll be using lots of CG in this film," which I had already assumed for the castle's movements. We still didn't really have the technology to move Sophie or Calcifer, but I thought it might be possible with a castle.

In all our previous films, CG work primarily revolved around providing movements for the background art. But as I worked on the recent films such as *Princess Mononoke*, *My Neighbors the Yamadas*, and *Spirited Away*, I increasingly felt the urge to create more dynamic movements. This was my first film where I concentrated on a character's movements.

My experience in approaching the castle as a character to create its movements made me realize how interesting characters can be. Of course, I wasn't working on a real human character, but I had to approach the castle's personality as if it were human in order to express its human-like personality. The performative aim, in other words, the acting in each scene, was incredibly important to my work. I wasn't all that interested in character until I took on this assignment, but now I understand what people mean when they praise character depth in a film.

(Director of Digital Animation: Mitsunori Kataama)
Mitsunori Kataama was born in 1964 in Yamaguchi Prefecture. After leaving the art department design program of Tokyo Geidai University, he studied with Masaki Fujihata and learned 3D CG. He was hired by Links (currently Links DigiWorks) in 1990. He received the gold prize for the 1992 International Computer Graphic Art Exhibition. He became CG director for the OVA film Macross Plus (1994). He joined Studio Ghibli in 1995. He was CG supervisor for *Princess Mononoke* and *My Neighbors the Yamadas*, and became Director of Digital Animation for *Spirited Away* (2001).

CG Works I — by the Digital Animation Staff

Processing for the castle

As soon as it became clear the castle's movements would be created with CG, I recalled the rubber multi-plane set used for the Ohmu in *Nausicaä of the Valley of the Wind*. I had in mind a perfected version of the rubber multi-plane for this film.

But the previous rubber multi-plane had many limitations. For example, not only were the movements for each part in the same direction, they could only be parallel. I had a feeling CG would add something fuller, enabling us to create movements where the castle would nearly fall over or open up like a fan. Also any large movements would look flat, so I broke the castle down into many parts, making sure the cartoon like eyes on the castle's face looked three dimensional, poking out like tubes.

I also didn't want the castle's movements to be restricted to simple stretching and shrinking in the usual rubber multi-plate style. I wanted the movements to be much more dynamic.

When I first looked at the concept art for the castle, it looked like a pile of junk. The image reminded me of the accessories dangling from a mountain climber's backpack so I thought of having the junk move as well. I would first create the movements for the main body and then have these other parts swing out of sync with the main body of the castle.

(Top from left)
Harmony original diagram, set with linear links, pasted harmony
(Bottom)
Castle as digital data to be broken down into parts.

Exploded layout of the complete parts. These were pasted onto a polygon plane with 3D CG software called Soft Image.

Determining the center of rotation in order to convey the most natural movement. The software provides a graph analysis of the castle's movements.

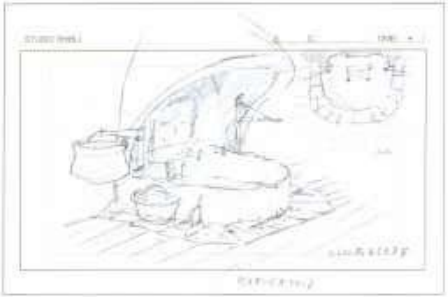
Castle's legs created by CG. Lighting provides texture and the software generated rubber is laid over, completing the legs.

Miyazaki at first wanted to try out a castle with 10 legs. In the end, the task would have been too demanding. It turned out four legs was quite effective already, so we decided on four legs for the castle.

We first began with a layout, breaking the castle down into each part based on Noriko Takaya's hair-raising processing that would "make the castle come alive." Taking into account the castle's movements we would break down the harmony into data while analyzing each part's structure. There were no drawings for the joints or overlapped areas between the disassembled parts. These areas were touched up with the stamp tool in Photoshop according to the movements of each part. That was how I completed the individual parts.

These parts were then formed into a polygon with 3D CG. I had to pay close attention to the overlaps between each part. By following the final design I made sure the parts were overlapped in the right order.

Atsushi Okui, the director of digital imaging, was responsible for the castle's steam and smoke, so he added a blur effect. Also, the constant chimney smoke was created during the digital composite stage so it would match the CG castle movements.



Inside the Castle

Looking for a night's lodging, Sophie enters the castle. There she meets the chatty fire demon.

1. Calcifer and Sophie in front of the fire (concept sketch)
2. Design for fireplace (concept sketch)
3. Interior view from the entrance (concept art)
4. The messy tabletop (concept art)
5. Sophie, exhausted, falls asleep while talking to Calcifer

"At first I thought normal fire colors would be bland for Calcifer, so I made his firelight greenish in my concept art. The only thing was that the green firelight would be reflected off the other characters, giving them a greenish tint. That would have given their faces a strange hue, so after Michiyo Yasuda from color design conducted several tests, we decided to use the normal color of fire to depict Calcifer."

(Art Director, Yoji Takeshige)

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Calcifer

The fire demon that fuels Howl's castle. Howl cast a spell binding him to the fireplace.

1 Calcifer attempts to persuade Sophie to help him banish Howl's magical spell.
2-10 Calcifer wearing various expressions.
11 The fireplace reflector (background).

"With Calcifer there were three points we had to cover for digital image processing: softening, transparency, and diffusion as a light source. I first planned on making him look more vibrant and flashy, but then we decided his image had to be congruent with the fairy-like atmosphere later on in the film, so we went back and toned him down a little. The dazzling textures of his first appearance are left intact for impact, but I gradually began to grasp Calcifer's personality later on."

(Director of Digital Imaging, Atsushi Okui)

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Howl's castle stands bathed in the pale moonlight.

Porthaven

The next morning Sophie wakes and finds herself in a harbor town instead of the wasteland. The doorways in Howl's castle lead to many locations. This is where Howl runs a magic shop, calling himself Jenkins.

1 The battleships steam out to sea as the other boat passengers wave at them.
2 Battleship fleet off to war (concept art).
3 Road leading to Jenkins' house.
4 Jenkins' house and neighborhood (concept art).

"The concept art for Porthaven was supervised by Nizaru Yoshida, but I drew the Jenkins house. I tried to convey the quaintness of a harbor town, but the colors were too dull, making it incongruous with the characters so this drawing was rejected."

(Art Director: Yoji Takeshige)

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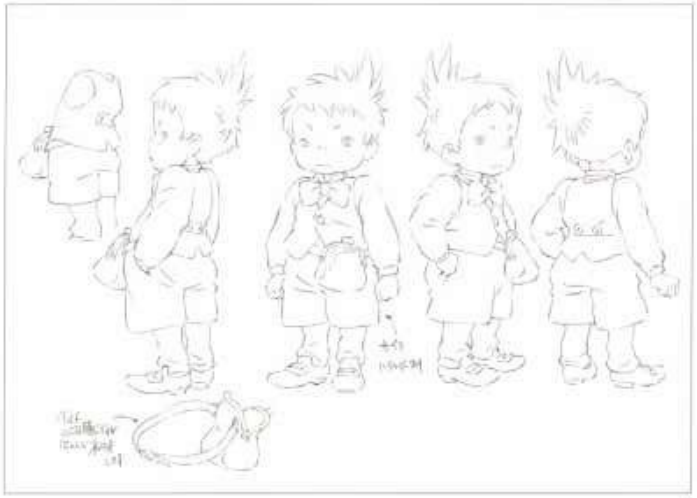
Markl

Disciple of the wizard Howl. He's still a child, but he looks after the castle for his master, granting his customers' requests for spells and magic.

1. Markl in the castle's living room (concept sketch).
2-3. Every time a customer comes in, he's disguised as a wizard's disciple.
4-5. Pose and close-up illustrations for Markl (character design).

"Once the storyboards were finalized, he ended up being a very obedient boy, but initially he was more a rascal in the character designs. On a subconscious level I'd incorporated some traits of Baby from *Spirited Away* into Markl's character design – his eyes were small and wide apart, and his legs ended up being short. This design would have made him look odd in terms of his physical proportions compared to the other characters. So I adjusted his proportions, making him taller and more human so he wouldn't look out of place."

(Supervising Animator: Akihiro Yamashita)



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Living Room in Howl's Castle

The living room and kitchen space in Howl's castle. The space includes Calcifer's fireplace, the cupboards and sink against the walls, and the messy tabletop in the corner.

1 Interior design for room with the fireplace at the center (concept sketch)
2 Design for the cluttered tabletop before Sophie cleans it up (concept sketch)
3 Design for entrance door to Howl's castle. Every time the colored disk spins it leads to another place (concept sketch)
4 Room seen through the window (concept art)
5 Room interior seen from staircase in the back (concept art)
6 The cluttered sink and cupboard (background)

"The room only has one window so I first conceived a drawing where a single ray of light shined against a post in the dark room. I made the drawing just to convey the atmosphere, but its lighting was so dull it clashed too much with the characters. I still made the room dark for my concept art, but I came up with color tones in conjunction with a lighting design and dusty setting that would enhance the characters."
(Art Director: Yoji Takeshige)

Howl's Cooking

1 Howl returns as Sophie begins preparing breakfast.
2 Howl takes the frying pan from Sophie and skillfully fries the bacon and eggs.
3-5 Calcifer consumes the eggshells offered by Howl.
6 Design for breakfast (concept sketch).
7 Cupboard (concept sketch).
8-10 Markl overjoyed at the rare sight of a warm meal.

The Witch's Brand

"And what is inside your pocket?". Howl's question surprises Sophie. A note from the Witch of the Waste had been slipped into her pocket. As Howl reaches for it the note sparks, briefly igniting the table.

1 The curse of the Witch of the Waste written on the note. "You, hunter of shooting stars, you heartless wretch. Your heart is mine."
2 Howl looks fierce.
3-4 Numb to the witch's hateful flames scorching his hand, Howl wipes away the brand.
5 Howl's ring (character design).

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Sophie's Housecleaning

Sophie begins cleaning the castle vigorously. Markl and Calcifer back off.

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1. "This is really insulting!" Sophie swiftly sweeps out the garbage.
2. The mice family escapes from the attack.
3. Calcifer is put in a steel pot while Sophie sweeps out the ashes.
4. Howl returns the weakened Calcifer to the fireplace.
5. Howl leaves a message, "Don't go overboard with the cleaning," and departs again.
6. Staircase landing covered with spiderwebs. (concept art)
7. Howl's filthy bathroom (concept art).

"I thought the concept art for the staircase landing really made it look filthy. I like this drawing. But because the walls are plaster with exposed beams, it looks more Japanese than foreign. I might have been able to make it look more foreign with some details like curved posts.

The clutter in Howl's bathroom was first going to be more generic, but when I began considering details like his grunge hair-dye powder scattered all over the place, I realized it had to be more flashy so I added a lot of colors. I avoided vermillion and red because they would look too bloody, opting for pink and purple tones for green and red spectrum colors."

(Art Director, Noboru Yoshida)

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Trip to the Lake

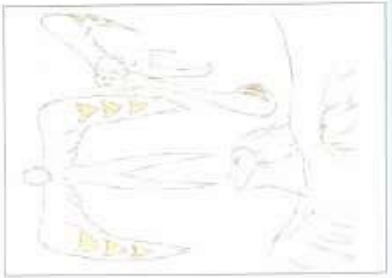
Once she learns how Calcifer powers the castle's movements, Sophie commands him: "Your magic is amazing. I'm really impressed." Calcifer is enthused by this rare praise.

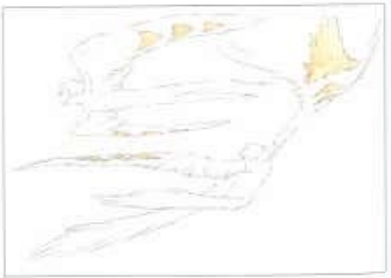
1-4. The glacial snow mountain overlooks Howl's castle moving along the ridge.
2. Sophie views the valley below from the castle's window.
3. A small stream and a flock of geese.
5. After being stuck to the castle, Turnip joins the procession.

Star Lake

Sophie dries her washing by the star lake with Markl and Turnip's help. Sophie has never felt so peaceful until this afternoon she spends by the beautiful lake.

1 Howl's castle stops by the shore
2 Sophie and Markl return to the castle in the sunset
3-4 Sophie and the others go out to dry the washing
5 Sophie watches by the lake





The Bird Howl

Howl transformed. The bird Howl changes increasingly as the story progresses.

1 The bird Howl descends to the earth.
2-4 Pose and close-up illustrations for the bird Howl (character designs).
5 The bird Howl glares into the distant darkness.
6 Distant view of the bombed city in flames (concept art).

"It resembled a swallow in the storyboards so we made him fly like a sparrow. It wasn't really featured initially, but once Miyazaki saw the character designs he said, 'This is too good,' and proceeded to add more bird scenes. In the final version, he had a predator's neck and glided like a sea ray."

(Supervising Animator: Akihiko Yamashita)

"I wanted to evoke tension in my concept art for the bombed city. Michiyo Yasuda from color design told me it would be difficult to assign colors for the characters because I had tinged the periphery too much with flames. In a real blaze, the flame is very red and the smoke is deep black, but the periphery isn't all that red. I just thought the emphasized hue would convey tension."

(Art Director: Yoji Takeshige)

Howl's War

The enemy battleship fleet approaches the air battalion bombers, commencing a battle. The bird Howl weaves his way through them. The mother ship spits out a flock of monster birds that go after the bird Howl.

1. The bird Howl illuminated by the flight battalion's searchlights (concept sketch)
2. The bird Howl finds the monster birds.
3. The monster birds attacking the bird Howl (character design).
4. Monster birds wearing masks and top hats.

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5. The air battalion dropping bombs.
6. Monster birds leaping out of the mother ship (flapping machine).
7. The grotesque enemy fleet.

"The character designs for the monster birds didn't change at all from the storyboard sketches. I love drawing monsters. The monsters first had stripes, but drawing them would have been too demanding, so they were removed later."

(Supervising Animator: Akihiro Yamashita)

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Howl and Calcifer

Howl returns home exhausted as the pale light of dawn approaches. Calcifer sounds worried, "If you fly too much you won't stay (human)."

1 Howl flops back against the seat in front of the fireplace, with his legs stretched over the hearth.
2-3 Howl recounts the horrific sight of the battlefield to Calcifer.
4 Sophie sleeping under the staircase landing. She's returned to her youthful state.
5 Howl watches Sophie sleeping behind the curtain. He's not surprised by her appearance.
6 Unaware of her state, Sophie wakes to the sound from the bathroom.

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Morning Market

Sophie goes shopping at the harbor with Mariel. The wrecked battleships return from the battle. The enemy air battalion in pursuit of the battleships drops bombs and warning flyers before flying away.

1. Sophie and Mariel headed for the harbor from Jeremie' house.
2. The crowded morning market at the harbor.
3. The battleships enter the harbor, sprouting smoke.
4. Water erupts from the bombs dropped on the harbor.
   The display stuns everyone.

Howl in Despair

Sophie and Marki return from the harbor only to hear Howl's screams echo through the castle. He claims Sophie cleaning up his bathroom has broken his magic and tarnished his hair. He ignores Sophie's words of consolation and summons the spirits of darkness out of despair.

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1-4 His hair tarnished, Howl screams despairingly, "What point is there to life if I'm not beautiful?!"
5 Shocked by Howl's rage, Sophie runs out of the castle.
6 Turnip offers an umbrella for the Sophie drenched in tears and rain.
7 Sophie recovers, returns to the castle and takes Howl to his bath.

"Howl's hair color changed a lot as I adjusted his skin tones accordingly. He looks most normal with black hair so I tried darkening his skin for that. When I first examined Miyazaki's concept sketches I wondered whether his clothes might be a little too flashy, but the more I looked at it, the more I got used to it, so it didn't seem so bizarre. Pink is prominent perhaps as a subconscious result of my impressions of Europe from our research trip. When a story is set in Japan I tend to use red and vermilion colors. Also, because Howl cares about his looks, I made sure he looked dashing whether he was a bird or worn out from fighting."
(Director of Color Design: Michiyo Yasuda)

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Howl bedridden. His cluttered room is filled with assorted toys, charms, and other paraphernalia to ward off witches.

Howl in His Bedroom

Shocked by his discolored hair, Howl is bedridden. He cringes when he hears about the Witch of the Waste coming after him and the emperor summoning him for his help in the war. Sophie checks on him and then claims he should refuse to join such a stupid war. Howl, however, must keep the oath he made when entering the magic academy.

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1. Sophie brings Howl warm milk.
2. Howl's cluttered room (concept art).
3. The objects around his bed are all charms to ward off witches.
4. Mobile that detects any trace of the Witch of the Waste.
5. The magic academy diploma pinned on the dartboard.

2

"For Howl's bedroom I decided to illuminate the dark room with yellow-green light in my concept art. Miyazaki told me, 'Howl probably wouldn't sleep in a dark place,' so I thought it would be interesting to mix some green with the yellow light. I would add some normal yellow to yellow-green highlighting, and then put some yellow highlighting over a blurry shape, or lay over yellow-green over something yellowish. It was subtle, but I wanted to mix yellow and green to create strange lighting. I drew the light source, approximating where it was in an attempt to convey the strange aura."

(Art Director: Noboru Yoshida)

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"We intentionally softened up the scene for depth, processing every shot to enhance the personality of each character. We also did this to open up the confined room. I did my best, though, not to blur the incredibly detailed backgrounds."

(Director of Digital Imaging: Atsushi Okui)

5

Journey to the Royal Palace

Howl suddenly hits upon the idea of having Sophie visit the royal palace. He wants her to pose as the mother of the wizard Pendragon (one of the names he occasionally assumes). He's hoping she'll be able to get him out of the war by saying her son is "no good." He lends her a charm ring and assures her, "Don't worry. I'll transform myself and accompany you." The skeptical Sophie replies, "Now I really have a bad feeling about this," but proceeds to walk.

1. Office district of Kingsbury appears as Sophie heads for the royal palace.
2. Sophie walks across the park. "It's unbelievable there's a war going on.
3. The old city gate of Kingsbury.
4. Sophie walks through the royal palace plaza.
5. Kayaks fly over the park.

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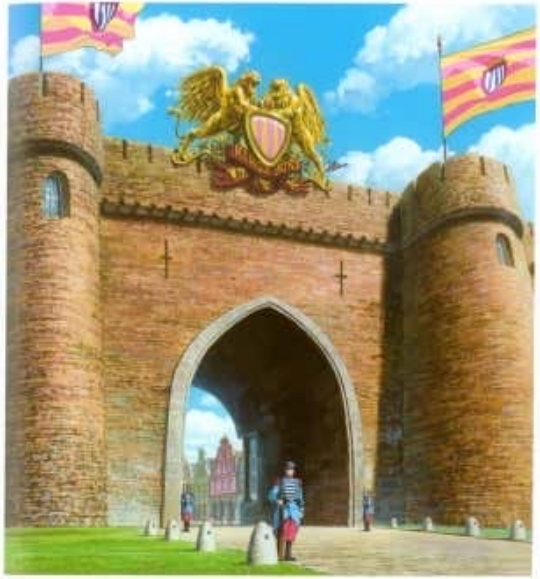

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Heen

Sophie encounters this dog in the royal palace plaza. He appears out of nowhere and follows her. Sophie assumes Howl disguised himself as this dog that turns out to be Suliman's servant dog instead.

1. Initial designs for Heen (concept sketches)
2. Pose illustrations for Heen (character designs)
3. Heen walks with Sophie

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"I didn't base him on any dog in particular. I followed the story boards and drew him accordingly. The director suggested, 'Not quite like the pooch in Hisaichi Ishii's *My Neighbors the Yamadas*, but this dog should look malicious.' I tried drawing him in a very normal style, but his legs ended up being so short I realized later that their movements were obscured at certain angles. The key animation and animation must have been surprisingly difficult."

(Supervising Animator: Takeshi Inamura)

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The Witch of the Waste Returns

As Sophie walks, the Witch of the Waste rides through on a palanquin. She has also received an invitation from the king. The royal court sorceress Madam Suliman meets her; she gloats, ignoring an infuriated Sophie who yells at her, "Lift this curse you put on me," and rushes forward.

4-5 "Hello. You run shet hat shop, right?" The Witch of the Waste addresses her from her palanquin.
6 The Witch of the Waste takes out a vial and sniffs the vapors.
7 The magic (silhouette) appear along the footsteps of the blob men carrying the palanquin.

The Witch's Palanquin

As they reach the bottom of the colossal stairway leading to the palace, the palanquin carriers collapse. Madam Sulman's magic talismans have drained the blob men of their power. The guard warns her: "Not beyond these premises, ma'am." The Witch of the Waste has no choice but to step out of the palanquin and walk.

1. The king's palace and gate
2. The colossal stairway leading to the palace entrance
3. The blob men collapsing as they become deformed
4. The witch's palanquin and the blob men (character designs)

Palace Entrance

Sophie climbs the colossal stairway with Heen in her arms. She passes the Witch of the Waste who is exhausted by the time she reaches the palace.

1 Heen cannot climb the stairs because of his short legs.
2 The Witch of the Waste is determined to climb the stairs.
3 Sophie reaches the top with the heavy dog Heen in her arms. A panoramic view of the entire city behind them.
4 The palace entrance (background).
5-8 Sophie, Heen and the wobbly witch walk through the palace.

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Suliman's Trap

Sophie and the Witch of the Waste are led to a room with only one chair. Sophie runs after Heen and exits when the witch, left alone, falls into Suliman's trap.

1 The Witch of the Waste suddenly turns around with the opening curtain. A gem lamp appears.
2-3 In the blinding light, black figures appear against the rug in a mandala formation. They stand and spin around the Witch of the Waste.

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[Top]
The Witch of the Waste is blinded by the powerful lamp.
[Bottom]
Shooting stars splashing.

Instead of applying the "realness" of CG, I wanted to enhance the "realness" of animation.

Director of Digital Imaging, Atsushi Okui

We didn't do anything particularly innovative in terms of technique with *Howl*. But the process we used to soften images was a complete departure from our work in previous films including *Spirited Away*. Until now, the softening was simple, derived from computer calculations where the background would be blurred or dimmed. The effect wasn't the same thing as softening the focus of a real camera lens. This time we used a tool that simulated the soft focus effect of a camera lens. The tool enabled us to achieve softening and made the backgrounds look more natural and elegant. We had a tool like this in the past, but it was problematic and took too much time to process. After modifying the tool with increased processing speed and precision we finally applied it. So I suppose it's more accurate to call the tool an update rather than an innovation.

I reevaluated my approach to special effects with this film. Special effects for previous animation films involved touch up effects. For example, skin blemishes would be added with dry brushing, but this time we tried using digital tools to achieve the same effect for touch up work, including the animators' pencil lines. In the latter half of the film after the castle collapses, Sophie gives Calcifer her hair, enabling him to revive a smaller version of the castle. That castle was an animation cell that was processed with special effects, and the results were beyond our expectations. I realized how computers could reproduce hand-drawn special effects. I'll have to incorporate this feature into my future work. If I were working on a full CG film I might take a different approach, but the cell animation style has been such an integral part of Ghibli films I plan on preserving that style. I'll have to explore how digital technology can be incorporated into hand-drawn work without harming its integrity.

My most difficult task was the digital processing for animated movements like the streams of smoke and steam from the walking castle. When I had to add smoky material to make the image look more real, it was very difficult to match the smoke with a natural motion because the animators' drawings couldn't be uniform. It would have actually been easier to create the image from scratch with CG, but then controlling the overall movements would have been difficult. We struck a balance where we would add CG smoke, but then in the castle's more performative scenes we would rely on the animation. Instead of applying the "realness" of CG, I wanted to find approaches to enhance the "realness" of animation conveyed in the world of *Howl's Moving Castle*.

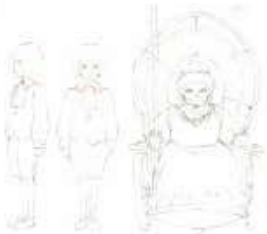
Atsushi Okui

Atsushi Okui was born in 1964 in Shimane Prefecture. He began his work in cinematography working for Ikeda Production in 1981. He first became camera supervisor for the film Dirty Pair (theatrical release, 1987). He was camera supervisor for Mobile Suit Gundam: Char's Counterattack (1988) and Mobile Suit Gundam: F91 (1991). He first worked for Ghibli as the camera supervisor for Porco Rosso (1992). Okui officially joined Ghibli when its camera department was established in 1993. He has worked on camera supervision and digital imaging direction for most subsequent Ghibli films, from Ocean Waves (1993) to Spirited Away (2001) and Gedo Senki (2006).

Greenhouse

1. Greenhouse interior where Sophie encounters Suliman (concept art).
2. Same greenhouse interior where Suliman greets Sophie. This drawing includes Suliman's table with the back of Sophie's chair in the foreground. (concept art)

3. Sprawling tropical plants in the greenhouse. Sophie is led through the vegetation by the foot page (background).
4. Palm tree grove where the aged Witch of the Waste is taken (background).



Suliman

She is the court-appointed sorceress and mastermind behind the king. Saddened by her former talented disciple Howl for leaving her, she keeps a close watch over him as a potential arch enemy.

1 Pose and close-up illustrations for Suliman (character designs).
2 Suliman and her servant dog, Heen.
3 Suliman and her foot pages (character designs).
4 Suliman tells Sophie about Howl.
5-10 As she defeats Howl, Sophie turns into a young woman. Suliman discerns Sophie's true appearance and feelings for Howl.

"Suliman was drawn very precisely in the storyboards so we only had to form the lines for the character designs. I did make sure though there was something scary concealed behind her gentle smile. Her facial features were slightly altered during the key animation stage. As Miyazaki checked the key animation, he altered it, saying, 'She won't look pretty without a sharp chin.' The final version for her is more elegant with a nicely shaped chin."

[Supervising Animator, Akihiko Yamashita]

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The Witch of the Waste Turned Old

1 Brought to Sophie's side, the Witch of the Waste has lost her magical powers. She has turned into a feeble, decrepit old woman. Sophie turns indignant when Suliman tell her she will meet the same fate if she refuses to cooperate with the king.
2 The Witch of the Waste completely transformed (character designs).

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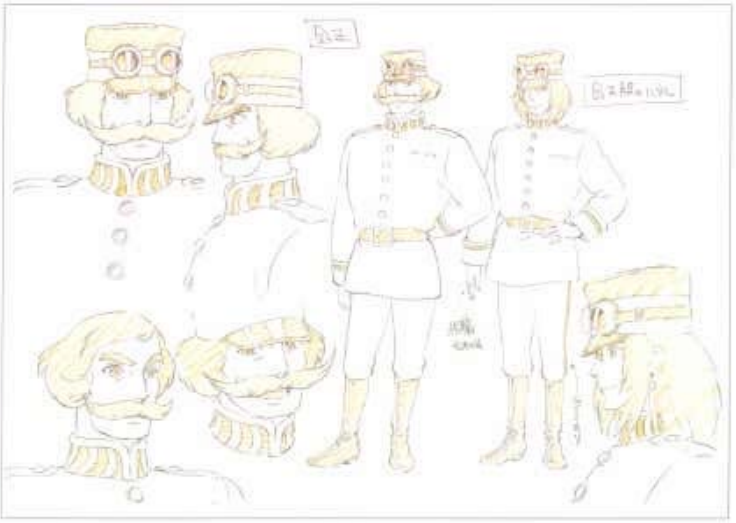

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The Emperor

The gallant emperor who stepped off his flying kayak turned out to be Howl. The real emperor's appearance surprises Sophie, but Suliman who saw through Howl's disguise remains calm.

3 The emperor and Howl in royal uniforms (character designs).
4 The fake emperor addresses Suliman.
5 The real emperor laughs out loud, commending him as a double.
6 Sophie surprised by Howl's unexpected appearance.

6

Suliman's Magic

1-6 Suliman's cane pierces the floor, opening a hole into what appears to be another world. Water bursts upwards and giant waves come crashing in over Howl, Sophie, and the Witch of the Waste.

7 Suliman's magic drags them out of the water and into the air.

8 "Don't look down. She is powerful." Howl tightly grips Sophie by the shoulder.

9 "I shall reveal your true nature to your mother."

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"Suliman is a middle-aged woman with power and wealth, so I first thought she would be wearing silk and velvet in white tones instead of making her clothes colorful. But this color design didn't really work when I tried it. As I worked on a contrast between her clothes and Sophie's, they ended up red. I wanted to make her look extravagant but at the same time elegant, so even her jewels are dark instead of being flashy. She looks very different from Yubaba in *Spirited Away*."

(Director of Color Design, Michiyo Yasuda)

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Escape

1-5 Shooting stars shoot through the sunset sky. Star children dart out, circling them in the sky.
6-11 Howl starts turning into a monster bird. But Sophie's voice brings him back. As Suliman throws her cane, he breaks through the green house window and leaps outside.

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"At first, we were planning on a more simple image for the star children circling around them, but key animator Shinya Ohnika drawings had a lot of movement. This really took Miyazaki and everyone else by surprise. The initial digital imaging design had to be canceled, but in the end it turned out to be very evocative. I think it really opened up the film. Suliman is using her magic to project Howl and Sophie's floating state against the greenhouse dome. I had already made plans to process it with sepiatone images, so it was hard to change them, but it was well worth it."

(Director of Digital Imaging: Atsushi Okui)

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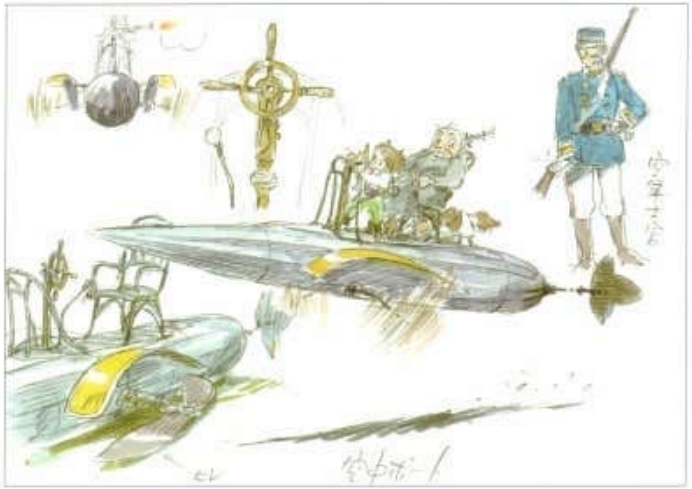

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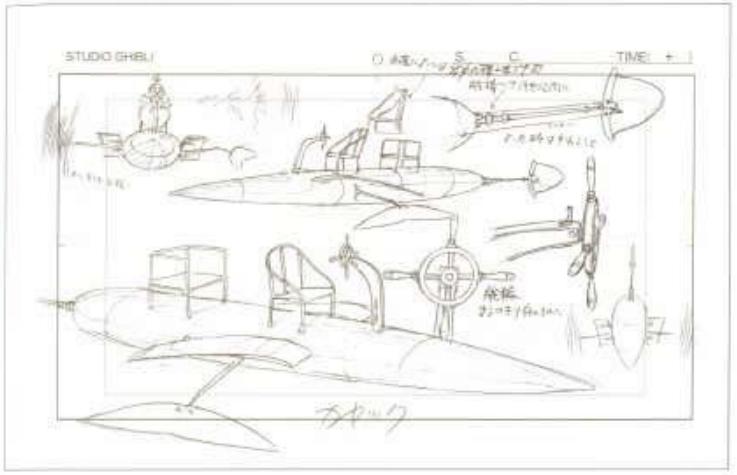

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"Myazaki designed the flying kayak. The design is very simple, but it was actually hard to achieve an overall balance. The animation was difficult because the seats had open frames. Every time the angle changed, you weren't sure how to draw them correctly. During the chase scene with slow kayaks in pursuit, the ships' bodies would shrink and stretch at the animation stage, so we would have the key animation fixed and then redo the animation."
[Supervising Animator: Akihiko Yamashita]

Flying Kayak

Taking Sophie and the witch, Howl escapes with this flying ship. The naval officers are letting their family or lovers ride them at the royal plaza of Kingsbury. In battle, a pilot and shooter ride a single ship.

1. Rough sketches for Howl, his friends, and the star children floating in the sky (concept sketch).
2. Naval uniform and flying kayaks (concept sketches).
3. Parts design for flying kayak (concept sketches).
4. Howl and his friends escape in the air. Heen is riding with them, too.
5. Flying kayak fleet in pursuit of them.
6. "I'll take care of them. Just steer the ship to the castle in the wasteland."

Return to the Castle

Guided by the light emitted by her charm ring, Sophie navigates the flying kayak back to the castle. But because she doesn't know how to stop it, the kayak crashes into the mouth of the castle, destroying the living room.

1. The flying kayak flies through the evening sky in the drizzling rain.
2. Howl is now their new friend.
3. Sophie steers the kayak in the direction of the ninja lights.
4. Sophie's city at night can be seen below.
5. The kayak crashes into the mouth of the castle.

Sophie enters the room, worried about Howl.

The Monster in the Cave

The castle is quiet in the middle of the night, with everyone asleep. Sophie wakes up to a sound. The sight of feathers and blood on the floor makes her nervous. She enters Howl's room on the second floor, which has turned into a dark cave.

1. Holding a candlestick, Sophie enters Howl's room.
2. The cave is filled with toys from Howl's childhood (concept art).
3. Howl, now a monster, wriggles around in the dark.
4. Sophie says, "I want to help you," but the monster Howl rejects her offer. "It's too late," and vanishes into the darkness.

1

"In my concept art I experimented with turning Howl's room into a cave. Sophie is holding a candle so I tried incorporating its light, but Miyazaki said, 'No, I want you to treat it as a mental image.' He informed me how the cave wasn't filled with real objects illuminated by Sophie's candlelight, so much as it was a passage to Howl's memory. So it's not a concrete illustration, it's a scene where one's memory of the past resurfaces. Because Howl's toys such as the dolls symbolize Howl's memory, I made the colors bright and immune to the candlelight."

(Art Director: Noboru Yoshida)

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Daybreak

Sophie wakes up from her nightmare. She's back to being an old lady. She desperately wants to lift the curse on Howl, but she has no idea how she's possible.

1 Sophie, despondent, gazes at the sea of clouds at dawn.
2 Markl and the others tug on a rope to dislodge the flying kayak that crashed into the castle.
3-5 Sophie, navigonstad, heaves the flying kayak out of the castle with the help of Markl and the others.

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Miyazaki's talents amazed me.
Supervising Animator, Kitaro Kosaka

Before we began working on this film, Miyazaki didn't specifically discuss the direction for this film, but his storyboards are so accomplished you can grasp his approach as long as you examine them closely. When I was uncertain about the movements or performance of a character I would directly consult with Miyazaki and add what was missing or expand on the performance or movements. I worked that way as the supervising animator for the two previous films, *Princess Mononoke* and *Spirited Away*. For example, the scene where Sophie and her friends pull out the flying kayak lodged inside Howl's castle involved many characters. We also had to determine the stress point of the stretched rope. As supervising director I would have Miyazaki check these details while conveying the essence of the original key animation.

My work as supervising director consists of cleanup animation for Miyazaki's rough sketches and checking the consistency of characters. Even though I'm not involved in drawing key animation, I really did want to draw Calcifer. I worked hard on my fire drawing technique for Isao Takahata when I worked on *Grave of the Fireflies* so I was pretty confident about drawing fire. I just thought it would be fun to draw fire as a character. But if I'd been assigned to Calcifer for the entire film, then I probably would have had the urge to draw the other characters (laughter).

As far as characters go, I was struck most by Sophie. She didn't really seem all that shaken by her aged condition from the curse. Sophie stayed calm in extreme circumstances that would have overwhelmed most people. I found this inspiring.

Although I was impressed by his approach to characters, what really amazed me was his incredible talent as a filmmaker. This film differs from his previous films insofar as the story assumes the perspective of the characters. We did our best to delete an explicit omniscient point of view or explanatory scenes. That's part of the film's appeal. The story is packed with stimulating scenes, and watching the story unfold is an enthralling experience for both adults and children. I really thought, "This is amazing."

Kitaro Kosaka

Kitaro Kosaka was born in 1962 in Yokohama. After graduating high school, he worked for Ghibli Production and established himself as an animator. He first worked as supervising animator for the television animation series, Famous Detective Holmes (1984–1985), and became a freelance artist in 1986. He worked on Ghibli films as a key animator for *Nausicaä of the Valley of the Wind*, and then became supervising animator for *Whisper of the Heart* (1995), *Princess Mononoke* (1997), and *Spirited Away* (2001). He was supervising animator and character design director for the television animation series *Master Keaton* (1998–1999). He directed and wrote the screenplay for the theatrical animation film *Summer in Andalusia* (2003).

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New Family

Everyone has breakfast in the living room with the gaping hole. Howl looks exuberant, reinvigorated from his bath. He looks at his new circle of friends and declares, "What an odd family we have here." He begins to move the castle to escape Suliman.

1 The Witch of the Waste stares at Calcifer and says, "It's such a pretty flame."
2 The gaping hole from the flying kayak crash (concept art).
3 Howl takes a look at the hole and laughs. "That's a real bruiser."

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4 The castle moves over the marking on the ground.
5-6 Howl draws the same magic pattern on the floor and uses Calcifer's magic.

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Moving

1-3 Calcifer bursts into flames from Howl's magic and the castle begins to shake loudly. New rooms begin to appear one by one.
4 The renewed kitchen (background).
5 A corner of the living room that's also unrecognizable (background).
6 The spectacular view outside the window is identical to the view she had from her workshop at the Hatter hat shop (background).

Sophie's Gift

Sophie is bewildered when she learns that Howl has reproduced the hat shop for her. Howl then opens the new door and takes her to the beautiful high moors.

1. Howl and Sophie stand on the hill covered with flowerbuds.
2. The sprawling high moors (concept art).
3. The cottage where Howl spent his childhood. He inherited it from his wizard uncle. It now serves as his hideout (concept art).
4. The cottage by the lake (background).

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"I really enjoyed drawing the concept art for this scene. I had Kazuo Oga and Satoko Hiramaru draw the backgrounds. I didn't draw that many on my own, but when I was drawing the concept art it felt wonderful and exhilarating."
[Supervising Animator: Noboru Yoshida]

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1 The doorway between the castle and the world of the high moors (background).
2 The mountains towering over the high moors (background).

High moors reflecting the drifting clouds.

Working on this film made me reevaluate my approach to background art.

Background Artist, Kazuo Oga

I drew the background art for the opening wasteland scenes, the high moors where Howl's castle relocates, and Suliman's greenhouse. Because the film was set in Europe, the art directors Yoji Takeshige and Noboru Yoshida had begun by depicting foreign settings in their concept art. They were very adept at evoking this atmosphere because they were both trained in oil painting. The concept art was very evocative. I first began by examining their work and research photos, but my drawings still ended up looking Japanese. Even the mountains I drew didn't have the colossal look of rocky mountains like the Alps or the Tian Shan mountains. They were more like the triangular mountains you see in Japan. I was trying my best to draw different mountains. Maybe the northeast landscape I grew up in somehow managed to seep into these drawings.

I didn't make a conscious effort to choose foreign-looking colors. My colors tend to be washed out so I made an effort to use thick colors for the tropical plants in the greenhouse. The flowerbeds in the high moors had to be pretty so I really spread them all over the drawing. I did a lot of drawings for this scene including the clouds and high moor slopes, but it was easy since I love drawing nature scenes. Drawing all those dots in the distance was pretty trying though. I got pretty tired of it (laughter).

None of my work was done in the studio for this film so when I saw the first cut, I felt objective as if I were watching something I didn't work on. I did draw backgrounds including the farmhouse scene where the aged Sophie rides the horse cart and some of the buildings in the city. But they weren't as detailed as the drawings by other staff members. For example, the drawings for Howl's bathroom really conveyed a filthy look, but the detail is also incredible. I'm sure it wasn't easy, but I really admired the staff's work. Both in terms of detail and quality, the art, camera and CG staffs at Ghibli are constantly improving. I no longer worked at the studio so I missed having the usual opportunity to learn from my informative, at times casual, discussions with Miyazaki.

For example, the initial background art I drew for the tea scene where Sophie and Markl stare at the lake apparently clashed with Miyazaki's approach. In keeping with the cloudy sky, I drew the lake with somber colors, but Miyazaki wanted me to brighten the water surface so its beauty would be otherworldly. I realized this was a special scene where this beautiful lake would make Sophie feel peaceful. The storyboards also emphasize how the landscape is supposed to be "incredibly beautiful." Instead of drawing a realistic nature landscape, I should have understood the impression it was supposed to give the viewer when I worked on the drawing. I realized I couldn't just rely on my own experience and knowledge to draw the appropriate background art.

Kazuo Oga

Kazuo Oga was born in 1952 in Akita Prefecture. After graduating high school, he attended design school. He was hired by the animation art company Kitasaka Productions in 1973. He worked as art director for the Ghibli films *My Neighbor Totoro* (1988), *Only Yesterday* (1991), and *Pom Poko* (1994). He was a background artist for *Princess Mononoke* (1997), *Spirited Away* (2001), and *The Cat Returns* (2002). He is now a prominent illustrator and the author of *Alaska* (published by Enki).

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Howl's Secret Garden

As she walks through the fields of flowers, Sophie is overcome with a strange wave of nostalgia. At the same time, she's worried that Howl might disappear.

1. "Thank you, Howl! It's like a dream."
2. Sophie is back to being a kind and sincere girl.
3. "I don't mind you being a monster."
4. The two stroll through the field of flowers.
5. Howl tries to console Sophie who becomes worried...

The Monstrous Flying Battleship

A gigantic flying battleship looms over as if to pollute the serene beauty of the landscape. It is going to bomb the cities and villages, and turn the entire area into a sea of flames... Howl glares at the vessel.

1. The monstrous flying battleship appears above the flowerbeds (background art).
2. Its belly holds an enormous supply of bombs.
3. The flying battleship slows down after Howl depletes its electricity with his magic.

Harmony Treatment

Harmony is the painted material on the cel sheet transferred from the trace machine. When harmony is applied, the background art and harmony are combined and treated as a single background. The background material drawn onto the cel is called "cel book."

Harmony processing involves the following steps:

1 Harmony design is drawn by the animator.

2 The trace machine (a copy machine that transfers the original drawing onto the cel with black carbon) transfers the harmony design onto the cel.

3 The harmony process supervisor works on the cel. Poster colors and cel paints are used to color the back of the cel with the transferred harmony design. Harmony involves unique approaches in order to convey a painterly quality—painted colors are scraped off to make room for other colors, or the highlighting on the surface of the cel is peeled off. The photo shows the backside of a completed harmony cel.

4 The completed harmony is viewed from the top of the cel(s) or else with digital photography and converted into digital data.

I wanted "the castle" to work as a character.

Harmony Process Supervisor, Noriko Takaya

After working on *Pom Poko* (1992), I stopped working on animation films. I resumed recently when Miyazaki invited me to work on the animation short films, *Imaginary Flying Machines* and *The Invention of Imaginary Machines of Destruction* screened at the Ghibli Museum exhibit, *Castle in the Sky and Imaginary Science Fiction Machines* (1002–5404). The subsequent film I worked on was *Howl's Moving Castle*.

When I first began, Miyazaki repeatedly reminded me, "the castle is a character." For example, the castle is revived after falling apart later on in the film. He wanted me to depict its vitality and strength to revive itself in spite of its wrecked state. Unlike my previous harmony processing, which consisted of matching the movements to the background art, this harmony had to provide the castle's personality.

The harmony process, which involves applying colors directly on the back of the cel, hasn't changed at all though. I mainly used poster colors for my materials, mixing them with cel paint to make them stick to the cels.

I supervised the harmony process for Howl's castle, the flying ships, and Howl's relocation, as well as the detailed interiors of Howl's room. I based the castle harmony on Miyazaki's storyboards and art director Nobuyo Yoshida's concept art. Miyazaki told me the colors should be "rusty and worn, like a pile of junk." I added colors that would look rusty, but it looked too cluttered. I wanted to use many colors that were variations of similar colors, but the results had too many colors. Yoshida's concept art was very romantic, but the castle I drew for harmony ended up looking really rough and crass. I'm sure Yoshida was offended by my drawings (laughter).

Because there were so many different locations for the castle, I discussed my approaches with Yoshida to match my drawings to the background art. I matched my work to the time of day, whether it was morning or sunset, depicted in the background art. We never used the same harmony for another scene. Given these circumstances, the castle harmony was the most dematching work I'd ever done.

The most difficult part for me was working on the scene where the flying ship flew over the burning city. The ship was supposed to be tinged with red from the flames below, but I just couldn't seem to convey the red tone Miyazaki wanted.... Instead of being the red of a flame, it only made the ship look red. I went through so many revisions for this scene without getting anywhere.

In the scene where Howl's castle relocates, Howl's magic ends with background art, but everything else up until that point is harmony. I had to draw the transformation of each piece of furniture. The total turned out to be a lot, but because I'd never done anything like this before I enjoyed the process. While working on the drawings, I would look forward to the processing by Mitsunori Katayama (director of digital animation) and then Atsushi Okui (director of digital imaging).

This was by far the most time consuming project—even counting my previous work on Ghibli films. I celebrated my birthday twice (laughter), but the work was very stimulating.

Noriko Takaya

Noriko Takaya was born in Tokyo. In 1993 she was hired by Design Office MECHAMAN where she was first assigned to supervise harmony for various figures including the Shinto for the Ghibli film *Mononoke of the Valley of the Wind*. She became a freelance artist in television series productions, supervising harmony for the Ghibli films *Castle in the Sky* (1986), *Kiki's Delivery Service* (1989), *Only Yesterday* (1991), *Porco Rosso* (1992), as well as *Akira* (1988) and *The Royal Space Force: The Wings of Honneamise* (1987).

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Tadpole Monsters

These black monsters are ejected from the back of the flying battleship and attack Howl and Sophie. They wear hats and masks like the dressed up black men.

1 The flying battleship descends into the valley, sounding its alarm.
2 Howl stops the flying battleship with his magic.
3 As he transforms himself, Howl takes Sophie and flies toward the cottage door.
4-6 The flock of tadpole monsters chases after Howl and Sophie.

Honey

She is Sophie's stepmother. She suddenly shows up, insisting they live together, but Sophie refuses. "I like the way I am now," she says.

1 "Someone strange entered," Miyazaki says when Honey appears.
2,3 Pose illustrations for Honey wearing a hat.
4 "Where have you been!!! I've been looking all over for you!"
5 "It's/ve turned into an old lady!"
6 "I did as I was told. Now take me back to my husband."
7 Honey feels guilty toward Sophie for participating in Suliman's plot.
8 Same model as Honey's steam automobile (character design).

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"I like middle-aged women so I did the character designs for her (laughter). I ended up drawing her stepdaughter Lettie, too. Miyazaki said that Honey was 'cute.' He must have been charmed by her ability to assert herself without being tied down to norms the way the Japanese are. When Honey finds Sophie, Miyazaki told me to make her lips flutter like a brilliant butterfly."
(Supervising Animator, Akihiko Yamashita)

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Life During Wartime

1. Sophie mends Markl's clothes.
2. Worried about Howl, Sophie sighs. The Witch of the Waste declares, "You're in love."
3. "I like you Sophie. Stay here."
4. "I do too, Markl. Don't worry, I'm not going anywhere," Sophie reassures Markl.

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The Peeping Bug

5. The Witch of the Waste opens up the bag Honey left behind...
6. A black creature wriggles out of the bag.
7. "A peeping bug, eh? That's an old trick, Suliman. Calcifer, burn this."
8-10. After eating the peeping bug tossed at him, Calcifer begins coughing up a strange smoke.

Hoel in pursuit of the fleet of bombers preparing to launch an air strike.

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Bombers

The giant battleships bomb Sophie's city. Although they differ from the ship in the high moors, they also carry an enormous supply of ammunition in the bomb bay located in the ship's belly.

1. Battlefield at twilight.
2. In the sunset, the large fleet of bombers head for a night air raid in the sunset.
3. Sophie's city at dusk.
4. Front view of the bomber. This image was drawn for harmony materials.
5. The flying bomber drops its bombs.

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Bombing

The war spreads to Sophie's city. Houses go up in flames from the bombing. Calcifer weakens, allowing a gang of blob men to close in on the Hatter's house.

1. The Hatter's inner courtyard ablaze in red from the bombing. The bomber fleet flies above (background art).
2. Sophie stares at the city ablaze when she notices the blob men surrounding the shop.
3. The entrance to the shop where Sophie stands and the main street.
4. Bombed railway corridor area.

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The Embrace

After escaping the gang of blob men, Sophie runs into the inner courtyard. Bombs begin falling when Howl soars down, blocks the bombs and rescues Sophie in the nick of time.

1. The bomber fleet continues dropping bombs.
2. Sophie freezes at the sight of the bombs.
3. The bird Howl soars towards her.
4. The living room glows from the flames outside (concept art).
5. The Witch of the Waste calmly smokes a cigar, hugging the terrified Markl.
6. The two embrace for the first time as the bombing continues.

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Protecting Sophie

1-2 The blob men in pursuit of Sophie invade the house. Howl ejects them with his magic.
3 Howl protects Sophie with his wings and brings her to his room.
4 "Come on, Calcifer." Howl pulls out the flames of the weakened Calcifer.
5 "Madam, that must be a gift from Suliman." Howl takes the cigar from the Witch of the Waste.

Howl at War

1. Howl tries to depart, leaving behind Sophie and her friends. Sophie desperately tries to stop him.
2. "We don't have to escape anymore. I finally have something I must protect."
3. Howl flies through the sky above the burning city, heading towards the bomber fleet.
4. Howl is transformed into a monster above the blazing ship as he continues fighting.
5. After moving the castle, Sophie looks down at the city from the wasteland.

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The Fallen Castle

If he goes on fighting for their protection, the transformed Howl won't be able to revert to his human state. Sophie is determined to go rescue Howl.

1. As he loads firewood onto himself, Calcifer protests moving the castle.
2. Sophie sticks out the ash shovel and scoops up Calcifer, saying, "You're coming with us, here!!"
3. Carrying Calcifer with the ash shovel, Sophie joins her friends to go outside.

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4. The castle is depleted of its magic once Calcifer gets and comes crashing down.
5-6. They are left alone in the rain. A new bomber fleet soars above them.

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Calcifer at Work

After they return to the fallen castle, Sophie asks Calcifer to revive the castle. Calcifer complains, "There's no chimney here and it's so damp." With Sophie's coaxing he eventually gives it a try.

1 "They say that the best aren't choosy."
2 "Will you give me something of yours then?" Sophie fulfills Calcifer's request by offering her braided hair.
3-4 Replenished from her hair, Calcifer expands and transforms the castle.
5 Reduced in size, Sophie's moving castle emerges from the pile of junk.
6 Sophie's castle descends the steps with Turnip.
7 "Amazing, Calcifer. You really are the best!"

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Sophie's Castle Runs Amok

1 Sophie's castle runs toward the city.
2 The lightning pierces the flock of monsters.
3 The Witch of the Waste removes Howl's heart from Calcifer.
4 Sophie's castle loses control and runs amok.

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6-9 The castle jumps as it crushes the ledges.

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"Those art boards depicted the coldest locations in the story. When I showed them to Miyazaki, he said, 'So we've reached the desolate part of the story.' I think that's what I conveyed in these drawings."

(Supervising Animator: Noboru Yoshida)

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Separated

Sophie pours water onto Calcifer in order to save the Witch of the Waste from the engulfing flames. The castle falls apart without his magic, separating Sophie from her friends...

1. Sophie's castle splits apart.
2. Heen leaps over to Sophie's side.
3. The side with Markl, the Witch of the Waste, and Turnip runs off into the distance.

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4 It falls into the valley. Sophie is shocked at the sight. Tears stream down her cheeks.
5 As Sophie sobs, Heen barks, trying to tell her something.
6 The ring emits a blue ray.

Into the Dark

1-2 Following the ninja light, Sophie and Heen step into the darkness beyond the door.
3 They find a desk inside the cottage from Howl's childhood (concept art).
4 Sophie approaches the desk, which seemed occupied.
5 A draft and battleship-shaped paper weight.

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6 Heen guides her outside. They watch the shooting stars falling beyond the marshlands.
7 The boy Howl stares up at the shooting stars showering through the sky.
8 Sophie dashes over to Howl.

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Star Children

1-7 The shooting stars land on the water by Sophie as she runs through the marshlands. Star children emerge and then vanish.

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"The star children weren't particularly difficult, but in their scene I had to work on choosing the proper colors and light to convey emotions for the innocent stars. The image for the star is based on blue, but I thought the blue for the climactic scene where he turns into star should be pure. I thought the stars that Suliman uses to surround Howl should look scary and loaded with significance. I kept on trying out various combinations of colors. I paid attention to the details, but the work demanded patience rather than skill."

(Color Design Director: Michiyo Yasuda)

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8 The black water of time comes between Howl and Sophie.

9 The boy Howl holds a star child and addresses it.

10-11 He appears to have swallowed the star child when all of a sudden Calcifer emerges with Howl's heart.

12 Sophie shudders as she sighs.

Worm Hole

Transcending time, Sophie witnesses the boy Howl making a deal with the devil. As tension builds up, the charm ring bursts apart. Sophie falls into the worm hole below her.

1. Sophie yells at Howl, "Wait for me in the future," as she falls into the black hole.
2. Sophie falls into the abyss between an eternal sunset and darkness.
3. Led by Heen, Sophie walks through the darkness and reaches the door.

CG Works II — by the Digital Animation Staff

Howl's Moving Castle included 198 shots processed by the digital animation staff. The total was approximately twice the number of CG shots used in *Spirited Away*. After explaining "the castle processing," the director of digital animation Mitsunori Kataama continued his commentary on his CG processing (editorial note).

Processing the Worm Hole

[Left]
The hole is drawn with vertical and horizontal paths (contour lines) and morphed over a time interval. The path for this opening is designed to morph in extreme.
[Right]
Elements to enhance the speed and spatial effect of the hole.

We called the CG processing for the shot where the ground turns into a worm hole, "processing the worm hole." Miyazaki said, "We can't convey the gradations of curves with cell drawings. Do you think it can be with digital animation?" That was how we ended up creating it with CG. Miyazaki made specific requests for this shot like, "I want it to look like a hole suddenly seen through the background art," and "it should look mysterious, like a black hole." I knew I would need something that would pull the colors surrounding the gaping hole into the black abyss. We first created a morphing hole with polygons and then added the background image onto its surface. I thought sending this image into the hole would create the kind of effect Miyazaki wanted. That's how I began my work. The first version was very graceful—it looked like a thin veil splashing inside the hole. But after looking at this version, Miyazaki said, "Make it more violent, as if this is the point of no return." So we ended up with the current version. We had the hole morph to extreme to convey its overwhelming power. I created the paths (contours) to create this dynamic, but it was hard work given the time constraints we had in the final stage of production.

CG Object

The wings for the flying battleship are CG objects. The small feathers are animation.

At the studio, we refer to CG generated three dimensional objects as "CG objects." The battleship wings and the spinning objects in Howl's room were CG objects. We made the wings morph as they move. For texture we pasted in luminous drawn by Noriko Takaya, but the outlines were generated with CG. Along with the outlines, the texture of the outlines was also created with a shader tool (program that calculates texture) we developed for our studio. As the wings flap, the line texture changes along with the shade. We applied a cell art texture to the objects in Howl's room.

The globe-shaped objects at the bottom right corner of the image and the globe in the back of the room are CG objects.

Fitting

The outlines of the door and hardware follow the path for each cell sheet. The image mistakes to fit into the original rectangular shape of the door. The photo on the left shows the fitting for the wooden portion. The hardware for the door requires additional fitting.

Similarly, points are assigned to each joint for the castle legs (see page 77) which are fitted to the poses. In this scene, the castle is about to stand up so fitting was applied to the entire castle.

"Fitting" is a technique where harmony or background art is modified with morphing software to be matched with animated cells and fitted with outlines. In *Howl's Moving Castle* we applied this technique to the castle's legs and the moving sequence, but we used it most extensively on the entrance door shot.

When animators draw a door in motion, they make it more trapezoidal and exaggerate its thickness as it opens up in order to convey its movement. Because CG accurately reproduces the perspective involved in depicting the door's movement, its movement looks very transparent and subtle. It's different from the cell animation. In order to convey that motion, we have to make the door become (trapezoidal) or stretch the door. We have to deliberately "miscalculate" with CG to produce the cell animation movement. So we would flatten out the ellipse which functions as the basis for calculation. This type of process for CG isn't very efficient. It's very time consuming. Of course, the results are good and the moving door is blended with the background, but I wondered whether there might be a better approach to accomplish this task.

I discussed the issue with Miyazaki. I had the animators only draw the door and then "fitting" the door by morphing it. I had them draw cell animation for the square pyramid door knob and oval window(s) and also morphed them to match the movement. This approach, while preserving the texture of the background art, reproduced cell animation movement. We wouldn't have been able to convey this exaggerated style of cell animation if we had only relied on CG animation.

The door movement consisted of 19 shots. The angles were almost identical so no one could tell when the motion was completed (laughter).

Fitting was applied to the cobblestones where Sophie and Heen walk together. The materials for cobblestone were altered as they were fit according to the outlines of the cobblestones drawn in cell animation. The process is similar to background cell animation.

Flag

Cloth simulation calculations generate the movement. Two small fans are placed to generate wind from both sides to create a complex fluttering pattern. The horizontal fluttering pattern (right photo) is created with the flag's wave pattern from the wind and additional light textures.

The flapping for the city flags and the flags on ships and yachts were all drawn with CG. It might have been possible to illustrate a single colored flag, but cell animation for each patterned flag would have been too demanding so they were created with CG. There were exceptions though. The tiered flags were cell animation.

There were approximately 25 shots for the flags, but once we created a flapping pattern, we could transfer the movement by altering the angle or shape according to the background art. We could reuse the flag design by re-pasting it.

The distant flags only have two yellow lines, but as they become more visible they reveal three lines—a cross or an emblem—as the details fade with the distance.

We only made two types of flags, the flags displayed in the city and the ones on the ships. Their movement was designed to be repetitious and we applied outlines with toon shader.

Path Map

(Top)
Crossing walking motion with background movement.
(Bottom)
The tension of the encroaching blob men is enhanced with three-dimensional depth.

We refer to the traditional type of camera work such as background animation processing (the objects on the sheet and the camera move together, or the background can be drawn into the cell to allow complex camera movements such as a veering shot) as "path map" at our studio.

Near the beginning of the film, Sophie and Howl are attacked by the blob men in the alley. This was a tracking (horizontal movement) shot where we applied path map. We also used it to enhance the movement in sequences including the scene where the camera pulls back, revealing the gang of blob men, as well as the scene where Howl and Sophie leap up into the air. We used path map most extensively in this scene. It was also used in the shot where the camera pulls back as Sophie enters the filthy bathroom and the tracking shot in the royal court plaza.

The storyboards only indicated a tracking shot, but the cuts where the camera moves in were all done with CG.

Morphing

Unlike three-dimensional CG, Morphing is a two-dimensional process. The digital animation staff has used this process since the making of *Princess Mononoke*.

In addition to the overall transformation of the room, the uneven time intervals enhance the swaying motion.

"Morphing" is a process where shapes are overlapped (previous images are dissolved into the subsequent images, also known as CG.) and modified. Reference points A and B are determined for the process. It was used for the shot where the Demon God runs away at the beginning of *Princess Mononoke* as well as the sequence of mud sliding out of the River Spirit in *Spirited Away*. In both cases, though, the movement was very simple. This time I wanted to add a wavering motion.

In the shot where Howl desperately summons the spirit of darkness because of his tarnished hair, we processed the image so that the time interval of transformation would be uneven across the entire image. The uneven parts were separate from the background art and created digitally. The unevenness determined the transformation time. That was how we achieved the wavy motion resembling curved glass.

Confetti

The movement for the confetti in the parade and the flyers falling through the sky were created with Particle (software that generates particle movement). The falling motion was divided between five (three frame) rough movement of distant objects and the two frame detailed movement of close objects. The shot above, which includes a detailed drawing, consisted of a passed frontal key animation drawing.

Processing the Water Surface

The lake in sentou-jo (here in little three-dimension al space). The surface of the water was processed so that waves would undulate and vanish incorporating the appropriate depth of field. CG staff added a flickering brilliance to the surface.

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The Kiss

1 Returning from the abyss of the worm hole, Sophie finds a monster crouched at the bottom of the valley. She approaches it. It is the beetle scarred Howl.
2 "I'm sorry. I'm so slow... You waited for me all this time." Sophie kisses Howl's cold lips.
3 "Take me to Calcifer." Howl hears her words and flies into the sky with Sophie and Heen on his claws.

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Liberation

4 The monster bird descends onto the castle, now reduced to its floor and legs.
5 As Sophie and Heen step off, the monster bird scatters its feathers and disintegrates, revealing an unconscious Howl underneath.
6 Sophie takes the heart guarded by the Witch of the Waste and returns it to Howl.
7-8 Calcifer returns to his state as a star child and leaps out of Howl's chest, soaring up into the sky.

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Turnip Saves the Day

Freed from his compact, Calcifer vanishes. Without its magic, the castle teeters with Sophie and her friends, and slides down the steep cliff toward the bottom of the valley. Turnip takes a graceful leap and lands in front of the floor, skillfully blocking its descent.

1 The castle tips over as it disintegrates.
2-5 The castle reduced to a floor begins falling.
6 Turnip's stick is reduced to a stump, but he manages to stop their descent.

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The Neighboring Country's Prince

1 Sophie hugs the exhausted Turnip and offers a grateful kiss.
2 Turnip suddenly starts trembling. He starts hopping away when...
3 Turnip turns into a dashing handsome boy.
4 His curse was lifted by the kiss of his beloved. "I am the prince of the neighboring country."
5 Once he learns about Sophie's feelings for Howl, Turnip decides to return to his country to stop the war.
6 The prince promises to see Sophie once the war is over. The Witch of the Waste, true to form, says, "I'll be waiting for you."

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Howl Wakes

"Could you quit drool? What is going on here?" Howl is awakened by everyone excited by the appearance of the neighboring country's prince. Sophie is relieved to see him well.

1 "Your body is like stone." Howl says. Sophie cheerfully replies with a smile, "That's right. The soul makes it heavy."
2 "Your hair is dyed with starlight. It's beautiful."
3 "I love you, Howl! I'm so relieved!" Sophie rushes forward and hugs him as he falls back and buries his head.

Joyous Heen

Suliman watches them in her crystal ball and scolds Heen. "You certainly took your time contacting me." She says. "So it looks like a happy ending."

1,6 Heen smiling in the crystal ball.
7 Suliman sighs and orders the face page to summon the ministers. "Let's put an end to this foolish war."
8 Sophie and her friends bid farewell to Turnip on top of the hill in the morning light.

Calcifer Returns

1 As Turnip goes home, hopping on his stick, Calcifer returns to them.
2 Sophie offers her hands to Calcifer.

Sophie and Howl's Castle

The war won't come to an end immediately, but Sophie and Howl embark on their new life together. Sophie and Howl's castle, now reborn, flaps its wings across the clear blue sky.

1 The new castle with wings and a propeller (concept art).
2 Sophie and Howl's castle flies above the field of clouds.
3 The castle's inner courtyard. The Witch of the Waste is reading while Marki plays.
4 Bird's eye view of the castle's inner courtyard (concept art).

"I was thinking of giving the castle a complete makeover as if Sophie and Howl were on a honeymoon, but because the castle consists of the junk created by Calcifer, Miyazaki told me it should look normal. Even though the concept art conveys a closing image of the family nest with the white walls, the old lady, and kid playing with his dog, the castle hasn't changed much aside from its ability to fly in the sky."
(Art Director: Yoji Takeshige)

Sophie and Howl on the castle terrace. The castle flies away slowly as it passes over the shiny white clouds.